



United States
Department of
Agriculture

Forest
Service

July
2018



Preliminary Environmental Assessment

Crescent Creek Wild and Scenic River Comprehensive River Management Plan and Forest Plan Amendment

**Crescent Ranger District, Deschutes National Forest
Klamath County, Oregon**

Township 24S, Range 61/2, Sections 1, 2, 11, 12, 13 and Range 7 E, Sections 8,
9, 14-21, Willamette Meridian

Contact:

Kyle Wright
Crescent Ranger District
P.O. Box 208
Crescent, OR
(541) 433-3224

Responsible Official:

John Allen
Deschutes National Forest
63095 Deschutes Market Road
Bend, OR 97701

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotope, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at http://www.ascr.usda.gov/complaint_filing_cust.html and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by:

(1) mail: U.S. Department of Agriculture
Office of the Assistant Secretary for Civil Rights
1400 Independence Avenue, SW
Washington, D.C. 20250-9410;

(2) fax: (202) 690-7442; or

(3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.

Table of Contents

Chapter One	4
Introduction	4
Document Structure	4
Background and Existing Condition	4
Purpose and Need for Action	8
Desired Future Condition	8
Public Involvement	8
Consultation with American Indian Tribes	9
Consultation with Government Agencies	9
Decision Framework	9
Issues	10
Chapter Two - Alternatives, including the Proposed Action	11
Alternatives Considered in Detail	11
Alternative A – No Action	11
Alternative B- Proposed Action	13
Boundary	13
Forest Plan Amendment	15
Resource Protection Measures	17
Alternatives Considered but Eliminated from Further Detailed Analysis	17
Chapter Three - Environmental Consequences	19
Cumulative Effects of Past, Present and Reasonably Foreseeable Future Actions	19
Geology	21
Cultural Resources	22
Botany	23
Special Status Plant Species	25
Invasive Plant Species	26
Recreation and Scenery	27
Fisheries	29
Forestry and Silviculture	31
Fuels	32
Hydrology	33
Wildlife	34
Transportation	40
Other Disclosures	41
Evaluation of the Forest Plan Amendment	43
Preparers	56
Appendicies	57
Appendix A: Crescent Creek Wild and Scenic River Comprehensive River Management Plan	57
Appendix B- General Information about the Effects of Designation on Private Lands within the Crescent Creek Wild and Scenic River Corridor Boundary	79

List of Tables

Table 1. The Underlying Deschutes Land and Resource Management Plan Allocations with the Wild and Scenic River Corridor	7
Table 2. Northwest Forest Plan Land Allocations within the Wild and Scenic River Corridor.....	7
Table 3. Alternative Comparison	14
Table 4. Past, Present, and Reasonably Foreseeable Future Actions	19
Table 5. Summary of TES and P and R6 Sensitive Plants	23
Table 6. Aquatic Species and Effect Determination.....	29
Table 7. Plant Association Groups	31
Table 8. TES Species that are Present or Have Potential Habitat Within the Proposed WSR Boundary	36
Table 9. MIS Species that are Present or Have Habitat Within the Proposed Crescent Creek Corridor	37
Table 10: BCC and LBFS with Suitable Habitat Present in the Crescent Creek Corridor.....	39
Table 11. Summary of Existing National Forest Transportation Motorized Route Designations.....	40
Table 12. Substantive Provisions from 2012 Planning Rule	46
Table 13: Deschutes Land Management Allocations	62
Table 14: Northwest Forest Land Management Allocations.....	62
Table 15: Section 7 Determination.....	75
Table 16: Monitoring Plan Elements. Including Values, Indicators, Thresholds, Triggers, & Actions	77

List of Figures

Figure 1.Crescent Creek Wild and Scenic River Corridor Vicinity Map.....	3
Figure 2. Current Interim Boundary for Crescent Creek Wild and Scenic River Corridor.....	6
Figure 3. Proposed Boundary Modifications for Crescent Creek Wild and Scenic River Corridor.....	6
Figure 4: Current Boundary and Land Management Allocations	61
Figure 5: Proposed Boundary and Land Management Allocations.....	61
Figure 6. Crescent Creek free-flowing through the Canyon	66

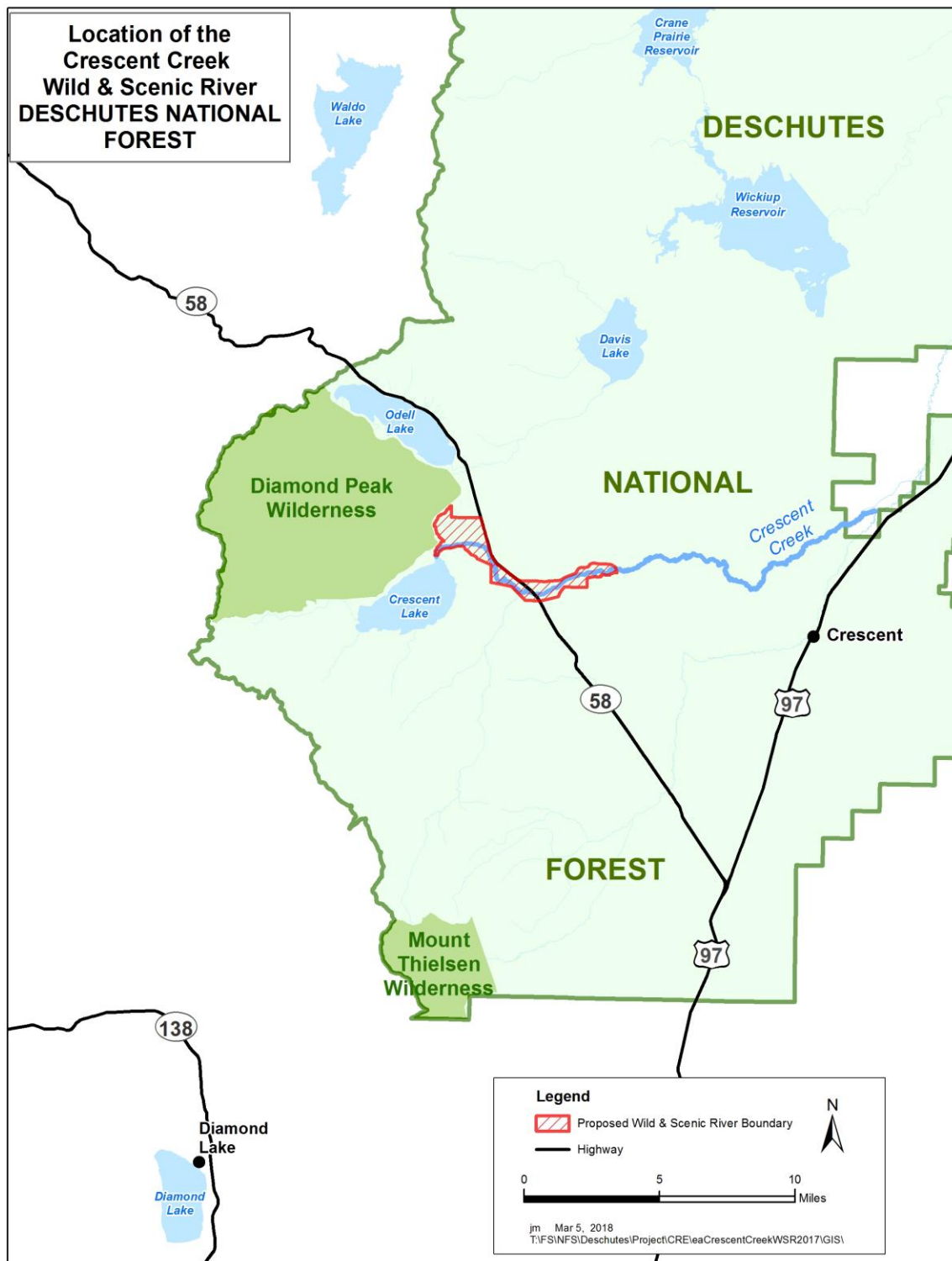


Figure 1. Crescent Creek Wild and Scenic River Corridor Vicinity Map

CHAPTER ONE

Introduction

Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This environmental assessment focuses on what is relevant and important and concentrates on the issues that are truly significant to the action in question, rather than amassing needless detail (40 CFR 1500.1). Legal requirements requires the documentation to only provide enough evidence to support our conclusions, address relevant environmental impacts and concentrate on whether the action would “significantly” affect the quality of the human environment. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the Proposed Action and the Action Alternative.

Therefore this “focused” Environmental Assessment may not include topics that are not required in an environmental document but have historically been included. Topics that have been eliminated are: project summary, NEPA process language, no action alternative (as long as no action is compared to impacts of the action alternative), lengthy list of forest plan standard and guidelines, or irreversible and ir retrievable commitment section.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Crescent Ranger District Office in Crescent, Oregon.

Background and Existing Condition

The Wild and Scenic Rivers Act was signed into law in 1968. The act protects free-flowing waters, water quality, and outstandingly remarkable values of many of our Nation’s most spectacular rivers and safeguards the special character of these rivers, while also recognizing the potential for appropriate use and development. The act purposefully strives to balance river development with permanent protection for the country’s most outstanding free-flowing rivers.

To accomplish this, the act prohibits Federal support for actions, such as the construction of dams or other instream activities that would adversely affect the river’s free flow, water quality, or outstanding resource values. **Designation neither prohibits development nor gives the Federal Government control over private property.** The act specifically:

- prohibits dams and other federally assisted water resource projects that would adversely affect river values (Section 7 of the act);
- protects outstanding natural, cultural, or recreational values;
- ensures water quality is maintained; and
- Requires the creation of a comprehensive river management plan that addresses resource protection, development of lands and facilities, user capacities, and other management practices necessary to achieve the purposes of the act [Section 3(d)(1) of Act].

Future actions or projects would require appropriate National Environmental Policy Act (NEPA) analysis, documentation, and public involvement for projects on Federal lands. Private landowners are not affected by this plan but are required under the Wild and Scenic River Act that for any project

they have that occurs within the ordinary high water mark of Crescent Creek to follow county, state, and Federal regulations, including potential analysis of Section 7 of the Wild and Scenic River Act.

Timeline of the Crescent Creek Wild and Scenic River Designation:

1988 – The designated 10 mile segment of Crescent Creek was designated by Congress as a Wild and Scenic River as part of the Omnibus Oregon Wild and Scenic Rivers Act of 1988.

1990 - A Resource Assessment was conducted to identify outstandingly remarkable values exclusive to the designated Wild and Scenic component of Crescent Creek.

2009 - Environmental Assessment was started.

2015 – A second Resource Assessment was conducted and completed in 2015 to identify outstandingly remarkable values exclusive to the designated Wild and Scenic component of Crescent Creek. The Resource Assessment confirmed geology and scenic vegetation to be outstandingly remarkable values (ORVs) for Crescent Creek.

2017 – Started the Comprehensive River Management Plan and Environmental Assessment to amend the Forest Plan to provide specific Forest Plan guidance to Crescent Creek as well as to identify a final River Corridor boundary as required by the Wild and Scenic Rivers Act. This Comprehensive River Management Plan is an outcome supported by this Environmental Assessment.

Location

Crescent Creek originates within the Deschutes National Forest on the eastern slopes of the Cascades and flows downstream approximately 33 miles to its confluence with the Little Deschutes River. The designated Wild and Scenic area includes 10 miles, beginning at the outlet of Crescent Lake and ending at the Forest Service boundary at the Crescent Cutoff Road. Legal description of this project from SW 1/4 of Section 11, T24S, R6E to the west section line of Section 13, T24S, R7E. Six of the ten miles of Crescent Creek designated as Wild and Scenic River corridor is managed by the U.S. Forest Service with the balance in private ownership.

River Corridor/ Boundary

The 1988 designation of the Crescent Creek Wild and Scenic River established an interim river corridor boundary with a width of 0.25 miles from the ordinary high water mark on either side of the river for interim management during the preparation of the final boundary and comprehensive river management plan. The adjustments to the Crescent Creek Wild and Scenic River boundary were intended to provide for protection and enhancement of river values. Section 3(b) of the Wild and Scenic River Act states “...establish detailed boundaries therefore (which boundaries shall include an average of not more than 320 acres of land per mile measured from the ordinary high water mark on both sides of the river).” This plan does not apply to any portions of Crescent Creek downstream, off of Federal lands, thus outside of the designated Wild and Scenic River Corridor. The entire Crescent Creek Wild and Scenic River segment is designated as “Recreational.”

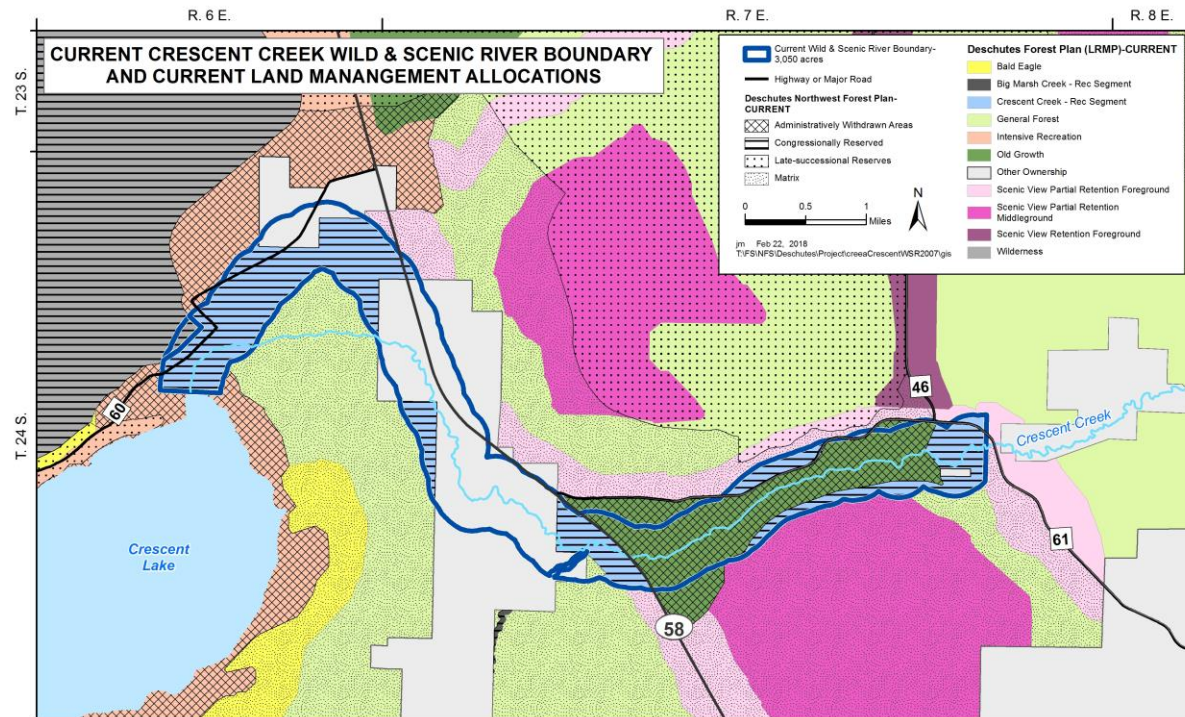


Figure 2. Current Interim Boundary for Crescent Creek Wild and Scenic River Corridor

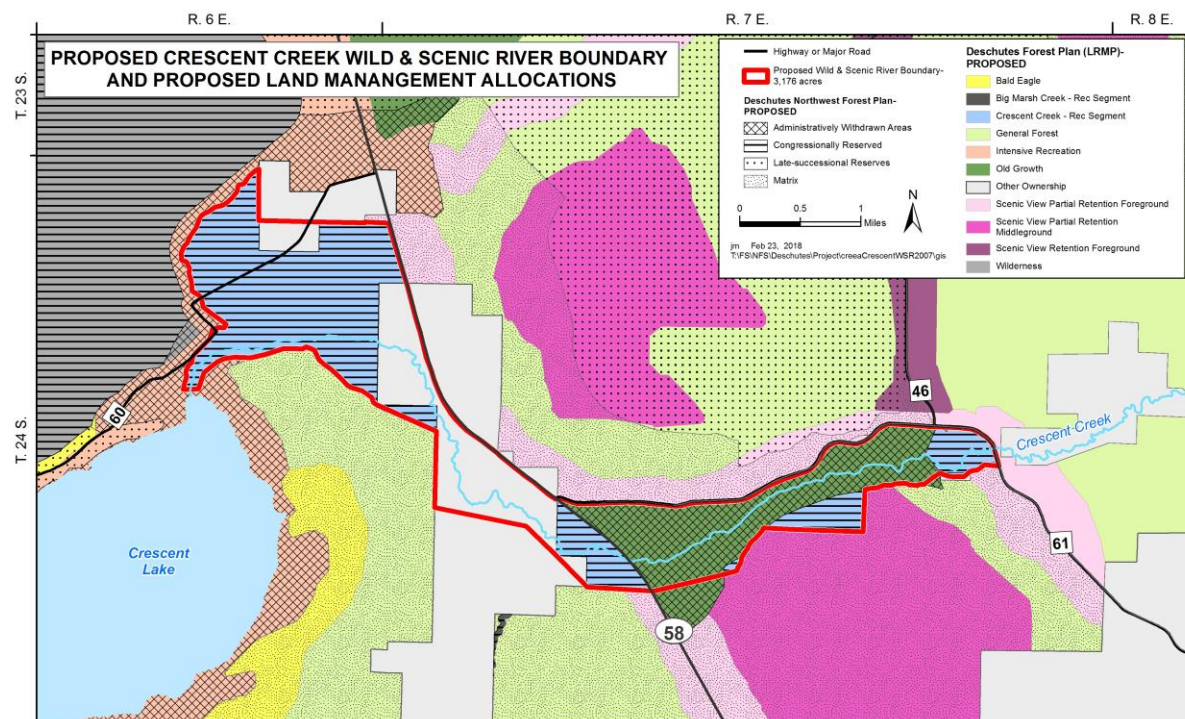


Figure 3. Proposed Boundary Modifications for Crescent Creek Wild and Scenic River Corridor

Management direction on the Deschutes National Forest comes from the *Deschutes National Forest Land and Resource Management Plan* (Forest Plan 1990), as amended by the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl* (Northwest Forest Plan 1994).

Table 1 and Table 2 below show how the new proposed Wild and Scenic River (WSR) boundary changes existing land allocation for both the Deschutes Land and Resource Management Plan (Table 1) and the Northwest Forest Plan (Table 2).

Table 1. The Underlying Deschutes Land and Resource Management Plan Allocations with the Wild and Scenic River Corridor

Deschutes Land Management Allocations	Management Allocation Acres within Current Interim WSR Boundary	Management Allocation Acres within Proposed WSR Boundary before the Forest Plan Amendment (FPA)	Management Allocation Acres within Proposed WSR Boundary after Implementation of FPA
Wild and Scenic	1,277	910	1,605
Old Growth	752	851	851
Other Ownership	984	721	721
General Forest	13	363	0
Wilderness	23	0	0
Intensive Recreation	0	238	0
Scenic View Partial Retention Foreground	0	25	0
Scenic View Partial Retention Middleground	0	71	0
Total Acres:	3,050	3,176	3,176

Note: Wilderness land allocation will not change, the difference is a result of wilderness no longer within the boundary. Old Growth Management Area will not change. Where Old Growth exists within the boundary it is also overlapped with Wild and Scenic.

Table 2. Northwest Forest Plan Land Allocations within the Wild and Scenic River Corridor

Northwest Forest Land Management Allocations	Management Allocation Acres within Current WSR Boundary	Existing Management Allocation Acres within New WSR Boundary before the Forest Plan Amendment	Management Allocation Acres within Proposed WSR Boundary
Congressionally Reserved	1,286	910	1,605
Administratively Withdrawn	752	1,086	851
Other Ownership	984	721	721
Matrix	13	458	0
Total Acres:	3,050	3,176	3,176

Outstandingly Remarkable Values (ORVs)

The Wild and Scenic Rivers Act requires that each river possess one or more outstandingly remarkable values to qualify for designation. The initial Resource Assessment was completed in 1990 and identified geology as the outstanding remarkable value for Crescent Creek. In order to be assessed as outstandingly remarkable, a river-related value must be unique, rare, or exemplary feature that is significant at a comparative regional or national scale. While the spectrum of resources that may be considered is broad, all values should be directly river-related. An updated Resource Assessment was completed in 2015 to evaluate which resources within the designated corridor qualify as outstandingly remarkable values and two were designated: geology and scenic views. Other values including recreation, hydrology, fisheries, wildlife and cultural history were evaluated but determined to not meet the criteria for inclusion as an ORV.

Purpose and Need for Action

The purpose of this proposal is to provide a basis to develop a comprehensive river management plan to protect and enhance the values for which the river was designated (free flowing, water quality, and outstandingly remarkable values) and identify and implement Forest Service management actions needed to protect these values within the Crescent Creek corridor on Federal lands. Section 3 of the Wild and Scenic Rivers Act (16 USC 1274, as amended) specifies a comprehensive management plan will be developed for the designated river corridor.

Planning is needed to integrate management of multiple resources, resource designations, and activities in the planning area. Management of uses on public lands is necessary in this congressionally designated area to address private, public, and administrative access needs; protect resources, promote public safety; and minimize conflicts among uses of public lands.

Based upon the review of the public input, evaluation of corridor conditions, and need for action, the comprehensive river management plan will focus on the following:

- as required by law, develop a comprehensive river management plan that addresses resource protection, land use, user capacities, and other management practices
- protect outstandingly remarkable values
- ensure free flowing conditions and water quality is maintained

Desired Future Condition

The Forest Service will implement a comprehensive river management plan to provide for the protection and enhancement of the river values that led to the designation of Crescent Creek as a Wild and Scenic River. A final detailed corridor boundary description will have been submitted to Congress.

Management will support a condition where landscapes within and near the channel of the Crescent Creek and its tributaries possess a concentration of complex, diverse, and highly scenic geological features created by glacial and volcanic events. Natural processes, including disturbance, continue across the watershed, occurring at natural rates and scales. The landscape scenery is dominated by natural character and retains the high level of scenic attractiveness and integrity and the geology is unique and these led to its Wild and Scenic River designation.

Public Involvement

The Forest Service engaged in a pre-NEPA public input process to learn and discuss what concerns the landowners had about the Crescent Creek Wild and Scenic River Management Plan (CRMP) and Environmental Assessment (EA) before the EA/CRMP was prepared. An evening workshop was convened on April 4, 2017 with local landowners, interested citizens, Klamath County Planning, and the Forest Service. The goal of this workshop was to provide an environment for learning about Crescent Creek, its designation as a Wild and Scenic River, what it meant for private landowners along the Creek and National Forest lands about protecting and enhancing the river's *outstandingly remarkable values* on Federal lands.

The Legal Notice for Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment (EA) scoping was published in *The Bulletin*, Bend, Oregon on June 26, 2017. The comment period ran through July 27, 2017. The 2012 Planning Rule, as amended, requires identification in the initial notice of the amendment of the substantive provisions that are likely to be directly related to the amendment (36 CFR 219.13 (b) (2)). At this point in the development of the Crescent Creek Wild and Scenic Management Plan, it was anticipated that under the Multiple Use category at 36 CFR 219.10 (v) *Protection of designated wild and scenic rivers as*

well as management of rivers found eligible or determined suitable for the National Wild and Scenic River system to protect the values that provide the basis for their suitability for inclusion in the system would apply.

During project scoping, the IDT received comments from six respondents on the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment proposed actions. The Crescent IDT reviewed all of the comments. Some respondents were concerned about private commercial companies along the creek, light pollution, the fact that Crescent Creek is not free-flowing due to the irrigation dam at Crescent Lake, replacing deteriorated bridges, extending the boundary, a prohibition on logging and livestock within the Wild and Scenic River corridor, no herbicide use, and no rock removal for landscape use, and siting of outhouses away from the Creek.

The project first appeared in the Fall 2015 of the *Schedule of Proposed Actions for the Deschutes National Forest*, which also appears on the Deschutes National Forest's website. It can be found at https://data.ecosystem-management.org/nepaweb/nepa_project_exp.php?project=47575.

Consultation with American Indian Tribes

During the early stages of this project, government-to-government contact was made with affected tribes including The Klamath Tribes, the Confederated Tribes of the Warm Springs, and the Burns Paiute Tribe. A September 18, 2015 letter notified The Klamath Tribes that the Crescent Creek Resource Assessment was completed and invited them to share their expertise and insight in developing a Wild and Scenic River Management Plan and EA. An October 27, 2016, a letter was sent to The Klamath Tribes and Confederated Tribes of the Warm Springs asking them for their expertise and thoughts on how to best protect this special creek.

The proposed action was presented in consultation letters dated June 23, 2017 to the Tribal Chairs and their Cultural Resource Program Managers of all three tribes. A site-specific Forest Plan Amendment under the Multiple Use category at 36 CFR 219.10 (v) *Protection of designated wild and scenic rivers as well as management of rivers found eligible or determined suitable for the National Wild and Scenic River system to protect the values that provide the basis for their suitability for inclusion in the system would apply.* The Klamath Tribes responded with interest to ensure that cultural resource surveys were completed prior to project commencement and that monitoring of all ground disturbance would be conducted.

Consultation with Government Agencies

Informal consultation and correspondence has occurred with the US Fish and Wildlife Service (USFWS) and the Environmental Protection Agency (EPA). Consultation has occurred with the State Historic Preservation Office (SHPO).

On March 29th 2017 a meeting was held with the Forest Service, Klamath County, Department of State Lands, US Army Corp of Engineering, and Oregon Department of Fish and Wildlife to review the Section 7 process and each agencies role/jurisdiction in the process.

Decision Framework

The responsible official for deciding the type and extent of management activities in Crescent Creek Comprehensive Management Plan is the Forest Supervisor of the Deschutes National Forest. The responsible official can decide on several courses of action ranging from no action, to selecting one of

many possible combinations in the project area. The responsible official will consider the following factors when making a decision:

- ❖ How well the alternative(s) meets the project's purpose and need?
- ❖ Public and partner comments on the analysis
- ❖ Environmental and social effects of the proposed action
- ❖ Necessary mitigations and resource protection measures for the implementation of the proposed activities

Issues

As defined in the National Environmental Policy Act regulations (40 CFR 1500.4(1)), issues are used in the development of alternatives to the proposed action. Issues are also given special consideration by the decision maker when selecting an alternative. Guided by the 1990 Forest Plan, and the Northwest Forest Plan (1994) the interdisciplinary team addressed the issues, comments, and concerns identified during scoping. The following scoping issues were identified for development of the comprehensive river management plan and addressed in the EA by respective specialists:

- fuels management and management of wildfire, reductions in hazardous fuels
- improved public access and recreation opportunities, particularly non-motorized
- private property protection
- roads
- Tumalo Irrigation District's ability to do maintenance on Crescent Lake Dam.

CHAPTER TWO - ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter describes the alternatives considered for managing the river corridor. It compares the alternatives, providing a basis for choice among options by the decision maker and the public. The Forest Service is required by law (The Wild and Scenic Rivers Act [1988]) to establish corridor boundaries and develop a comprehensive river management plan. This Plan addresses the rivers public use, development of lands and facilities, user capacities, administration resource protection, and other management practices necessary to achieve the purposes of the Wild and Scenic Rivers Act.

The 1990 Deschutes Forest Plan provides general direction to protect and enhance the ORVs on all Wild and Scenic rivers on the Forest. The direction in the Forest Plan was intended to be temporary until the river planning process (see Chapter 1) and appropriate river-specific management plans could be completed.

In developing the proposed action the Interdisciplinary Team (ID Team) reviewed existing direction (Forest Plan and amendments), existing conditions (resource assessments, Watershed Analysis, recreation reports), and public comment received during the resource assessment process. Where ORVs or other river-related values are declining, or insufficiently protected, new standards and guidelines became part of the proposed action.

Alternatives Considered in Detail

This environmental assessment evaluates a single action alternative—the proposed action, because no unresolved conflicts emerged from issues that fell within the scope of the project. A No Action Alternative—in which management continues under existing standards and guidelines—is analyzed to provide a baseline for comparing environmental effects.

Alternative A – No Action

Under this alternative, the Crescent Creek Wild and Scenic River Corridor will not change from the existing Deschutes National Forest LRMP interim direction for Wild and Scenic Rivers (Management Area 17). The boundary would remain defaulted at ¼ mile on each side of the river and bordered by County Road 61. No new direction would be designated. There would be no changes in the amount or types of current uses within the Crescent Creek corridor.

The following are the applicable interim Standards and Guidelines from the Deschutes Land and Resource management Plan (Forest Plan):

Recreation Development: Larger scale public use facilities, such as moderate size campgrounds, public information centers, and administrative headquarters are allowed if such structures are screened from the river.

Structures: Any concentrations of habitations are limited to relatively short reaches of the river corridor. New structures that would have a direct and adverse effect on river values would not be allowed.

Utilities: New transmission lines, gas lines, water lines, etc. are discouraged. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are indicated, they will be required to protect or enhance the resource values identified for the river.

Motorized Travel: Motorized travel on land or water may be permitted, prohibited, or restricted as necessary to protect the river values.

Vegetation Management: Vegetation management activities would be allowed under standard restrictions to protect the immediate river environment, water quality, scenic quality, fish and wildlife, riparian plant communities, and other values. Harvest of trees would be oriented towards enhancement of scenic, hydrologic, fisheries, recreational and/or wildlife values. Over the long-term, the appearance of the river corridor should remain near-natural with the impacts of project activities apparent but subordinate to the natural character of the landscape. Cleanup after project activities would be completed within one year. Dead or dying trees adjacent to the river and associated recreation facilities would be evaluated for their scenic, hydrologic, wildlife and fisheries (should they fall in the river) values as well as for any safety and disease control risks they may pose. Salvage for commercial timber value should not be automatic. Additional measures designed to mitigate impacts such as flush cutting stumps in visually sensitive areas and falling trees away from the river would be employed.

Water Supply: Existing low dams, diversion works, rip rap and other minor structures are allowed provided the waterway remains generally natural in appearance. New structures are prohibited.

Hydroelectric Power: No development of hydroelectric power facilities is allowed.

Flood Control: Existing flood control works may be maintained. New structures are prohibited.

Mining: Regulations set forth through which the use of the surface of National Forest System lands in connection with operations authorized by the United States mining laws (30 U.S.C. 21-54), confer statutory rights for the public to enter public lands and search for minerals. Subject to regulations (36 CFR 228) that the Secretaries of Agriculture and the Interior may prescribe to protect values of rivers included in the National System, new mining claims and mineral leases are allowed and existing operations are allowed to continue. Mineral activity must be conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Geothermal: Leasing and development would be permitted with no surface occupancy.

Road Construction: Paralleling roads or railroads could be constructed on one or both river banks. There can be several bridge crossings and numerous river access points.

M17-7: Management will emphasize maintenance or enhancement of habitat for watchable wildlife, especially in the riparian zone. Retention of snags will be emphasized for dependent species habitat, and as a source of large organic debris for the river. Snags which may be a hazard in recreation sites will receive careful scrutiny and will be removed only if they pose a hazard.

M17-8: Work with the Oregon Department of Fish and Wildlife and local irrigation districts to establish acceptable flows for fish survival.

M17-9: Fish and wildlife habitat improvement projects should be natural appearing and be compatible with other values of the riverine setting.

M17 -11: Visual management standards used for recreation river classification is Partial Retention.

M17-12: A variety of County, State, and Federal government entities have responsibilities and interests in the management of these river and stream corridors. Each has a unique area of expertise and authority and each can make a contribution in protecting these river systems.

Working cooperatively with these organizations will be an essential part of the Forest Service management effort.

Alternative B- Proposed Action

This alternative would recommend a permanent boundary and adopt a comprehensive river management plan to include Management Area 17 (Wild and Scenic Rivers), create standard and guidelines, while identifying management strategies, and thresholds to address issues to achieve the purpose of the Wild and Scenic Rivers Act. The full comprehensive river management plan for Crescent Creek can be found in Appendix A (page 57).

In developing the proposed action, the interdisciplinary team included the Forest Plan Management Area 17 (Wild and Scenic Rivers), reviewed existing direction (1990 Forest Plan and amendments), existing conditions, and public comments. New management strategies (strategic management approaches) became part of the proposed action where outstandingly remarkable values or other river values were needed to meet the desired future condition or where more specificity was needed to protect and enhance outstandingly remarkable values.

Additional standards and guidelines are created under the proposed Comprehensive River Management Plan (CRMP) in order to protect the Outstanding Remarkable Values of Geology and Scenic Vegetation and protect water quantity and quality. (G-Geology, SV- Scenic Views, and H-Hydrology)

G-1: The location of claims under current mining laws will be continued (no locatable minerals are known to be present within the corridor); mineral leasing and the disposal of saleable minerals will only be allowed if such activities would protect and enhance Outstanding Remarkable Values or free-flow/ water quality benefits.

SV-1: Partial retention will be used as the visual management standard within Crescent Wild and Scenic River boundary.

H-1: Wood manipulation to allow boating is not allowed.

H-2: Trails will be designed to avoid sensitive riparian areas and to the extent possible provide access to the creek at designated locations.

H-3: Dispersed camping sites will be managed consistent with the Travel Management Project Final Environmental Impact Statement for the Deschutes National Forest, Ochoco National Forest, and Crooked River National Grasslands (2011).

H-4: Habitat improvement projects will be allowed, should be natural appearing and be compatible with other values of the riverine setting.

Boundary

The Wild and Scenic River Act allows the interim 0.25-mile boundary provided by Congress to be adjusted to provide for protection and enhancement of river values. The proposed boundary would be expanded to include the Cold Creek tributary system, which contributes approximately 15 cubic feet per second of cold water which is critical to the overall total flow of Crescent Creek before the

junction with Big Marsh Creek. The boundary avoids the maintenance yard for the Union-Pacific Railroad, which is under Special Use Permit with the Forest Service and reduces the amount of private property. The boundary was also modified to be more easily enforced by using roads and section lines.

To reflect the changes to the boundary, the Management Area Categories (allocation) under the Forest Plan would be changed for Crescent Creek WSR. Everything within the newly adjusted corridor boundary would become Wild and Scenic, with the exception of Old Growth Management Area (OGMA) which would be overlapped by the Wild and Scenic designation.

The interim Standards and Guidelines listed for Alternative A are incorporated into this alternative with the following exceptions noted in Table 3 that compares the alternatives.

Table 3. Alternative Comparison

Resource Area	Alternative A	Alternative B
<i>Wild and Scenic River Boundary</i>	Approximately ¼ mile from the banks of the creek.	Modified to include hydrologically connected areas, including Cold Creek system, and be more easily located and enforced by using roads, and section lines.
<i>Wildlife</i>	Use existing direction from Forest Plan - MA-17 and Forest-wide Standards including Wildlife, Riparian Areas, Law Enforcement, and Northwest Forest Plan, Eastside Screens, INFISH.	Use existing direction and add Standards and Guidelines emphasizing protection of scenic views, water quality and water quantity.
<i>Recreation</i>	Use existing direction from the Forest Plan - MA-17 and Forest-wide Standards including Recreation, Transportation System, Special Uses, Riparian Areas, Law Enforcement, and Northwest Forest Plan, Eastside Screens	No change in existing Standards and Guidelines. Addition of monitoring plan will allow for adaptive management.
<i>Roads and Access</i>	Paralleling roads or railroads could be constructed on one or both river banks. There can be several bridge crossings and numerous river access points.	No change in existing Standards and Guidelines. Addition of monitoring plan will allow for adaptive management.
<i>Commercial and Special Uses</i>	Use existing direction from Forest Plan - MA-17 and Forest-wide Standards including Recreation, Special Uses (SU-16 through SU-46), Law Enforcement, and Northwest Forest Plan, Eastside Screens, INFISH. Currently, there are no restrictions to collection of special forest products.	No change in existing Standards and Guidelines. Addition of monitoring plan will allow for adaptive management.
<i>Geology/Mining</i>	Use existing direction from the Forest Plan - MA-17 and Forest-wide Standards including Minerals and Energy Resources.	The location of claims under current mining laws will be continued (no locatable mineral are known to be present within the corridor); mineral leasing and the disposal of saleable minerals will only be allowed if such activities would protect and enhance Outstanding Remarkable Values or free-flow/ water quality benefits.
<i>Scenery/Vegetation</i>	Use existing direction from Forest Plan -	Use existing direction. Vegetation

Resource Area	Alternative A	Alternative B
	MA-9, 17 and Forest-wide Standards including Forest Health, Timber Management, Riparian Areas, Fuelwood, Fire and Fuels Management, Law Enforcement, and Northwest Forest Plan, Eastside Screens, INFISH, Scenery and Regional Weed EIS.	management would aim to restore fire regimes for the area. For example, in ponderosa pine and mixed conifer, the goal is to restore appropriate fire return intervals using silvicultural techniques and prescriptive application of fire. In lodgepole pine, recognize stand replacement as a potential process within the corridor and look at placing strategic risk reduction activities outside of the corridor first to reduce risk to private land, Odell Butte Lookout and the electronic site. Target removal of small diameter live trees and down material along private land and county road 62 as an acceptable practice if effects to ORVs for scenery can be found to be neutral or beneficial.
Hydrology/Fisheries	Use existing direction the Forest Plan - MA-17 and Forest-wide Standards including Riparian Areas, Water and Soils Best Practices, Riparian Areas, and Northwest Forest Plan, Aquatic Conservation Strategy, INFISH, Clean Water Act.	Use existing direction and add Standards and Guidelines to prevent wood manipulation for boating, dispersed camping sites will be regulated to protect river resources, and encourage natural appearing habitat improvement projects.

Note: Monitoring Plan and Visitor Capacity analysis can be found in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan in Appendix A

Forest Plan Amendment

The Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment proposes a programmatic¹ Forest Plan amendment that is specific to the project area and is necessary to modify plan components including Standards and Guidelines and Management Area categories for lands within the river corridor. The interim Wild and Scenic boundary would be adjusted and finalized and the Management Area Allocations under the Land and Resource Management Plan/Northwest Forest Plan would be changed to Wild and Scenic (M17) along Crescent Creek, thus the need for the Forest Plan Amendment. Everything within the newly adjusted corridor boundary would become M17 Wild and Scenic, Recreational, with the exception of the current 851 acres of Administratively Withdrawn/Old Growth Management Area (OGMA) which would stay the same and just be overlapped by the Wild and Scenic designation.

Changes to the LRMP as amended by the NWFP include:

1. 458 acres of Matrix under the NWFP (363 acres of General Forest) would change to Wild and Scenic Management Allocation M17.
2. 334 acres of Administratively Withdrawn (238 acres of Intensive Recreation) would change to Wild and Scenic Management Allocation M17.

¹ A programmatic amendment changes the Forest Plan for the duration of the Plan whereas a site-specific amendment arises from the need to take a specific action to meet a forest plan goal or desired condition and only applies to that project or activity.

3. 25 acres of Scenic Views-Partial Retention –Foreground and 71 Acres of Scenic Views – Partial Retention- Middleground would change to Wild and Scenic Management Allocation M17. Under M17-11 these Scenic Views would be managed as Partial Retention.

Background

In 1988, Congress added the 10 miles of Crescent Creek to the Wild and Scenic River System as part of the Omnibus Oregon Wild and Scenic Rivers Act of 1988. Consistent with the Wild and Scenic Rivers Act, the Forest Service has established a corridor width of 0.25 miles from the ordinary high water mark on either side of the river for interim management during the preparation of the final boundary and comprehensive river management plan. The Deschutes National Forest Land and Resource Management Plan (1990), as amended, initially set interim standards and guidelines for Wild and Scenic Rivers (Management Area 17).

The proposed changes in this EA are modest in scope, because they finalize what Congress had already legislated as a Wild and Scenic River corridor and what has been managed as eligible since 1990 through the Forest Plan. Currently, Crescent Creek is managed under a variety of Management Area (MAs) under the Forest Plan. These allocations do not precisely match the 0.25 mile interim corridor boundary that was described under the Wild and Scenic Rivers Act.

The Comprehensive River Management Plan (CRMP) formalizes the management of the river. Through this process, the Forest has decided to modify the boundary slightly, determine the desired condition, and clarify Standards and Guidelines. This information, in combination with professional knowledge and field visits, was used to evaluate each potential ORV for the river. Specialists also referred to criteria used to determine the significance of river-related values provided by the Interagency Wild and Scenic Rivers Coordinating Council.

Direction

Forest plan amendment direction comes from the 2012 Planning Rule (36 CFR 219). The 2012 planning rule has different provisions than the 1982 Planning Rule under which the existing plan was developed. All future projects and activities must be consistent with the amended plan.

The EA focuses on the effects of creating specific standards and guidelines and desired conditions on multiple rare species and habitats; most other potential effects are within the scope of the Forest Plan FEIS or the analyses in previous amendments. As explained below, this amendment complies with the procedural provisions of the 2012 Planning Rule and all the directly related substantive requirements in sections 219.8 through 219.11 of the 2012 Planning Rule (36 CFR Part 219).

The analysis addresses all the substantive requirements of the current rule that differ from those in the 1982 rule (See Chapter 3 for the evaluation of the Forest Plan Amendment). The substantive requirements include:

- **36 CFR 219.8**–Sustainability, The plan must provide standards or guidelines that maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area.
- **36 CFR 219.9**–Diversity of plant and animal communities. The plan must provide for the diversity of plant and animal communities
- **36 CFR 219.10**–Multiple Use, While meeting the requirements of §§ 219.8 and 219.9, the plan must provide for ecosystem services and multiple uses, including outdoor recreation, range, timber, watershed, wildlife, and fish.
- **36 CFR 219.11**–Timber Requirements, While meeting the requirements of §§ 219.8 through 219.10, the plan must include plan components, including standards or guidelines,

and other plan content regarding timber management within Forest Service authority and the inherent capability of the plan area.

Based on the direction provided in 36 CFR 219, the Responsible Official must determine the appropriate scope and scale of forest plan amendments and which substantive provisions of 36 CFR 219.8 through 219.11 apply to the project. Based on the need for change, the site-specific conditions for the project area, and the relevant forest-specific information and data, the following substantive requirements of 36 CFR 219.8 through 219.11 apply to the proposed amendment to adjust the current interim boundary and underlying management allocations for the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment (See Chapter 3 for the evaluation of the Forest Plan Amendment). For the Wild and Scenic River the following substantive provision was found applicable to the Crescent Creek Wild and Scenic EA Purpose and Need:

219.10(b)(v) Protection of designated wild and scenic rivers as well as management of rivers found eligible or determined suitable for the National Wild and Scenic River system to protect the values that provide the basis for their suitability for inclusion in the system.

The following four provisions would be applicable to the effects from implementing this Forest Plan Amendment. There are no on-the-ground actions from this EA (see Chapter 3 for the Evaluation of the Forest Plan Amendment).

219.8(a)(2) Air, soil, and water, 219.9(a)(1) Ecosystem integrity, 219.10(a)(1) Aesthetic values, air quality, cultural and heritage resources, ecosystem services, fish and wildlife species, forage, geologic features, grazing and rangelands, habitat and habitat connectivity, recreation settings and opportunities, riparian areas, scenery, soil, surface and subsurface water quality, timber, trails, vegetation, viewsheds, wilderness, and other relevant resources and uses, and 219.10(a)(2) Renewable and nonrenewable energy and mineral resources.

Direct, Indirect, and Cumulative Effects

As this project or Forest Plan Amendment proposes no on-the-ground actions there would be no direct, indirect effects, or cumulative effects.

Conclusion

The effects of the programmatic Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment Forest Plan amendment would have a beneficial effect in meeting project goals and achieving desired future condition for the Wild and Scenic River corridor and help preserve the free-flowing nature and water quality as well as the Outstandingly Remarkable Values of the river corridor as Congress intended.

Resource Protection Measures

No Project Design Features or Mitigation Measures are proposed for this plan. All elements of the alternatives are entirely programmatic in nature. Future actions would require appropriate NEPA documentation and mitigation measures to eliminate, reduce, or compensate for potential impacts.

Alternatives Considered but Eliminated from Further Detailed Analysis

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action provide

suggestions for alternative methods for achieving the purpose and need. Some of these alternatives may duplicate the alternatives considered in detail or may be determined to be unable to meet the project's Purpose and Need. No alternatives emerged from issues that fell within the scope of the project, this environmental assessment evaluates a single action alternative—the Proposed Action.

DRAFT

CHAPTER THREE - ENVIRONMENTAL CONSEQUENCES

Cumulative Effects of Past, Present and Reasonably Foreseeable Future Actions

The cumulative effects analysis in this EA is also consistent with Forest Service National Environmental Policy Act (NEPA) Regulations (36 CFR 220.4(f); July 24, 2008), which state, in part:

“CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions. Once the agency has identified those present effects of past actions that warrant consideration, the agency assesses the extent that the effects of the proposal for agency action or its alternatives would add to, modify, or mitigate those effects. The final analysis documents an agency assessment of the cumulative effects of the actions considered (including past, present, and reasonable foreseeable future actions) on the affected environment. With respect to past actions, during the scoping process and subsequent preparation of the analysis, the agency must determine what information regarding past actions is useful and relevant to the required analysis of cumulative effects. Cataloging past actions and specific information about the direct and indirect effects of their design and implementation could in some contexts be useful to predict the cumulative effects of the proposal. The CEQ regulations, however, do not require agencies to catalogue or exhaustively list and analyze all individual past actions. Simply because information about past actions may be available or obtained with reasonable effort does not mean that it is relevant and necessary to inform decision making (40 CFR 1508.7).”

This section summarizes the affected environment and the potential changes and effects due to implementation of an alternative and the basis for comparison of alternatives. Only resources the interdisciplinary team determined to be affected are identified and analyzed. The level of detail reflects the amount of information necessary to understand the effects of the actions. The effects discussions presented in this chapter are summaries of information from the resource specialists. The summaries focus on the resource issues and project goals disclosed in Chapter 1.

Table 4. Past, Present, and Reasonably Foreseeable Future Actions

Project/Event Name	General Description of Activities	Status
Region 6 Invasive Plant EIS (2005)	Implements Standards and Guidelines and prevention strategies to manage invasive plant species.	Implementation
Deschutes and Ochoco National Forests and Crooked River National Grassland Travel Management Project EIS (2011)	Motorized travel in central Oregon would be restricted to designated roads and trails only. Access to dispersed camping would have special provisions to limit access to sensitive areas.	Implementation
Invasive Plant Treatments for the Deschutes and Ochoco National Forests and the Crooked River National Grassland – Final Supplemental EIS (2012)	Supplemental EIS for site-specific treatment of invasive plants at approx. 1,892 sites on the Ochoco and Deschutes NF and Crooked River National Grassland. Methods include herbicides, manual, mechanical, and cultural.	Implementation

Project/Event Name	General Description of Activities	Status
Three Trails (2010)	142 miles of designated motorized OHV trails over a 93,016 acre project with the focus on areas that are currently being most heavily used by riders. Fifty-six to 94 miles of user-created trails would be rehabilitated.	Implementation
Marsh EA (2015)	Restoration of existing ditch lines in Big Marsh, creation of a sustainable recreation system, and vegetation management.	Implementation
Forest-wide Firewood CE (2017)	Encompass entire Deschutes National Forest west of the “owl line”	Implementation
Ringo EIS (in progress)	Vegetation management on approximately 7,770 acres of commercial thinning as well as associated fuels treatments, and 5,752 acres of fuel treatments/prescribed fire.	In Progress

Geology

Affected Environment

Crescent Creek represents outstanding and remarkable values for the region, worth preserving because it exemplifies a geomorphological area. The Crescent Creek's outstanding and remarkable geologic values provide enjoyment and an area of scientific study of the considerable variety of glacial and erosional processes and landforms for present and future generations.

Existing surface geology within the proposed Wild and Scenic River boundary

- 76-77% Quaternary gravels – glacial deposits from Suttle Lake advance (glacial maximum 20,000 years ago) mapped to head of canyon.
- 13% Two Quaternary Tertiary older mafic vent complexes (Royce Mountain to the north and Odell Butte to the south) that form canyon that Crescent Creek flows through.
- 10% Quaternary fluvial mixed grain sediments downstream mouth of canyon
- <1% Quaternary cinder cone on far eastern boundary limit

Groundwater Dependent Ecosystems (GDE)

- Two (2) springs are located in Township 24 South, Range 6 East, Sections 2 and 11 along the west boundary of the proposed draft Wild and Scenic River boundary and down slope of the railroad grade.

Cave Resources

- No known caves within the proposed draft Wild and Scenic River boundary. If any caves are discovered, the Forest Service would refer to the Federal Cave Protection Act of 1988.

Geo-Hazards:

Volcanic Hazard

The entirety of Crescent Creek free-flows through the High Cascade Mountain geologic province which is principally composed of quaternary volcanic vents and lava flows. The volcanism in the Cascades is driven by an active subduction zone off the coast of Oregon making central Oregon constantly prone to new volcanic events. The area of, and immediately adjacent to, the 10-mile Wild and Scenic boundary has not experienced any recent (within last 10,000 years) volcanism, thus the probability of a volcanic hazard in the vicinity of Crescent Creek is low. Thirty three miles northeast of the eastern Crescent Creek Wild and Scenic boundary Oregon's youngest lava flow (Big Obsidian Flow) erupted 1,300 years ago. Thirty six miles south-southwest of southern Crescent Creek Wild and Scenic boundary, Mount Mazama erupted 7,700 years ago forming Crater Lake, Oregon's only National Park.

Earthquake Hazard

In October 2015, six miles northeast of the eastern Crescent Creek Wild and Scenic boundary, a swarm of 43 earthquakes was recorded by Pacific Northwest Seismic Network's seismographs.

Rockfall Hazard

High slope angles (27 to 45 degrees) and exposed large rock outcrops lead to increased probability of natural rockfall in the steep canyon between Royce Mountain and Odell Butte.

Mineral Material

There are no active or closed mineral material sources (rock pits and quarries) within the proposed Wild and Scenic River boundary.

Locatable Minerals

Scenic and recreation portions of the Wild and Scenic River Act are not withdrawn from locatable mining. On March 20, 2017, used the DOI BLM online database LR2000, performed a Mining Claim Geographic Index report search for all active, closed, pending, and void mining claims. The LR2000 report for T24S, R6E and T24S, R7E did not reveal any active, closed, pending, and void mining claims within the proposed draft Wild and Scenic River boundary. Based on this search there are no valid existing rights within the proposed Wild and Scenic River boundary.

How the Geology ORV contributes to Desired Future Conditions

Land forming processes will continue at a natural pace. Landscapes within Crescent Creek possess a concentration of complex, diverse, and highly scenic geologic features created by glacial and volcanic events. The diverse and varied geological features of this area are protected, and provide opportunities for learning about the unique volcanic and glacial forces that formed this mountain landscape.

Environmental Consequences

Alternative A (No Action)***Direct and indirect effects:***

Since there are no new activities which would occur under this alternative, there would be no direct or indirect effects. The direction from the Deschutes National Forest Land and Resource Management Plan, as amended, including direction for Management Area 17 (Wild and Scenic Rivers) and Forest-wide standards including Minerals and Energy Resources would remain unchanged. The Geology resource as an Outstanding Remarkable Value (ORV) would not be further protected under this alternative because no additional standards and guides would be applied.

Cumulative effects: After reviewing the table of Past, Present, and Reasonably Foreseeable Future Actions in the EA, there would be no overlapping projects that affect geologic resources. There would be no cumulative effects.

Alternative B (Proposed Action)***Direct and indirect effects:***

The proposed changes to the river boundary would include river related geological features and the new boundary would be easier to enforce. The geological resource would be better protected and enhanced for future visitors.

Cumulative effects: There are no Forest Service activities within the zone of influence (the Wild and Scenic River Boundary) that have the ability to affect geological resources and no foreseeable future actions in the next five years except this plan, which contains no on the ground actions, in the project area, therefore there would be no cumulative effects.

Cultural Resources

Affected Environment

Approximately 28% of the FS lands within the Crescent Creek Wild and Scenic River (WSR) boundary (excluding 721 private land acres) have been subject to an adequate level of cultural resource inventory surveys. An additional 11% has been previously surveyed but the surveys are no longer considered adequate as standard procedures have changed in the last 30 years. The previous surveys resulted in the discovery of 12 archaeological sites within the WSR boundary. Four of the sites are from the pre-contact era, five are within the historic period, and three are multi component historic/pre-contact sites. Eleven of the 12 sites have been evaluated for eligibility to the National

Register of Historic Places (NRHP). Nine of the sites were deemed eligible and two sites were considered not eligible. One site remains unevaluated due to a lack of information.

Environmental Consequences

The designation of the final boundary designation for the Crescent Creek WSR Corridor, re-designation of the underlying land management allocations, and the development of management plan does not authorize any on-the-ground actions within the Crescent Creek WSR boundary on Federal land for *Alternative A (No Action Alternative)* nor *Alternative B (Proposed Action)*. All future undertakings planned within the project boundary will undergo a separate review process to determine effects pursuant to Section 106 of the National Historic Preservation Act (36 CFR 800). Therefore, there will be no effects (direct, indirect, nor cumulative) to cultural resources as a result of this decision.

Botany

Summary

Table 5. Summary of TES and P and R6 Sensitive Plants

Species	Alternative A (No Action)	Alternative B
Whitebark Pine, <i>Pinus albicaulis</i>	MIH*	BI*

*MIH: May impact individuals or habitat, but will not likely contribute to a trend towards federal listing or a loss of viability to the population or species.

*BI: Beneficial Impact

* No Impact

Special Status Plant Species

Because there are no ground-disturbing activities currently proposed by this alternative, there would be no direct, indirect, or cumulative effects to any sensitive or survey-and-manage species in the watershed. There are no known federally listed threatened or endangered species in the watershed, so the proposed action should have no direct, indirect, or cumulative effects on any threatened or endangered species.

Invasive Plant Species

Because the proposed boundary designation and management plan do not authorize any ground-disturbing activities, these actions in and of themselves would not lead to the introduction or spread of invasive plants.

Survey and Manage

This project is within the boundaries of the Northwest Forest Plan, therefore Northwest Forest Plan (NWFP) direction from the January 2001 *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* as altered by the 2011 Consent Decree and the May 13, 2014 Letter of Direction applies to this project.

Plants- There are no known Survey and Manage sites within the Crescent Creek WSR. The Proposed boundary designation and land management allocation changes does not involve any habitat-disturbing activities within old growth forest stands, so there is not a requirement for botanical surveys for listed Survey and Manage species.

While there are no known Survey and Manage occurrences within the WSR, there are several sites just outside the WSR boundary on the west side of Odell Butte.

Affected Environment

TES Plants and Fungi

There is only one Proposed or TES- Federal Candidate Species occurrence within the WSR, which consists of a small stand of whitebark pine (*Pinus albicaulis*) along the canyon segment of Crescent Creek below Odell Butte. This stand was found and documented during recent botanical surveys within the Ringo planning area that encompasses Odell Butte. Whitebark is currently a R6 Sensitive species and is also a candidate species for listing under the Endangered Species Act. Below is a brief summary of the ecology and conservation concerns with whitebark pine.

Whitebark pine is in severe decline throughout the species range (Keane et al. 2010). The primary causes of this decline are white pine blister rust (*Cronartium ribicola*), an introduced fungal pathogen, and the native mountain pine beetle (*Dendroctonus ponderosae*). Climate change is also considered a threat to whitebark pine. Species not normally adapted to alpine areas at or near timberline are likely to spread to higher elevations with increases in temperatures (Tilley et al. 2011). Fire suppression has also been attributed to declines in whitebark, with shade-tolerant trees encroaching into areas dominated by whitebark (Kendall and Keane 2001). Due to dramatic decline of whitebark pine throughout its range, in 2011 it was listed by the U.S. Fish and Wildlife Service as a candidate species under the Endangered Species Act (USFS 2014).

Fens - The fens within the proposed WSR are intact and appear to have little recent disturbance to them. However, there has been some historical impact to these areas, at least at the western edge of WSR boundary. This includes the construction of the railroad, with mounds of fill placed across sections of wetland. There is also the 620 road, which parallels the railroad tracks. This gravel road also crosses a section of wetland, as well as several springs (Culverts have been installed where the road passes over the springs). It appears that water movement has not been completely impaired by the road and its fill, as subsurface seepage is occurring from the springs on the west side of the road, to the main body of the fen on the east side. However, it can be assumed that the road and the railroad tracks have impaired the natural hydrology of the site to a certain degree. Although the road does experience light use from a variety of sources (OHV's, mountain bikes, snowmobiles, and horses), there was no evidence of human disturbance within the fens during the 2009 field surveys. There was also very little indications of wildlife impact to fens, as from big game foraging in these areas. Noxious weeds were also not observed within or around these fen complexes.

Wetlands – In addition to fens, other wetland types are also present within the proposed WSR corridor. This includes an extensive forest/shrub wetland just east of the Crescent Lake Road (60 Road). While the fens are dominated by mosses and sedges, this wetland is dominated by dense stands of bog blueberry (*Vaccinium uliginosum*) and bog birch (*Betula glandulosa*), with a scattered overstory of lodgepole pine (*Pinus contorta*). This wetland also contains extensive mounds of *Sphagnum* mosses, with swathes of sedges such as wide-fruit (*Carex utriculata*) and water sedge (*C. aquatilis*).

The other large wetland within the proposed Crescent WSR is located where Crescent Creek passes under Highway 58. This wetland is dominated by robust stands of Geyer's and Lemmon's willows (*Salix geyeriana* and *S. lemmonii*, respectively), with scattered patches of bog birch. This wetland complex also contains extensive meadows of sedges (water and wide-fruit) and in drier areas, stands of tufted hairgrass (*Deschampsia caespitosa*).

A similar wetland type is found at the northeastern corner of the Crescent WSR, at the site of the Crescent Creek Campground. Here the vegetation is also dominated by Geyer's and Lemmon's willows, with an understory of spiraea (*Spiraea douglasii*) and wild rose (*Rosa woodsii*). This site

also has a vigorous aspen stand (*Populus tremuloides*), which has been protected by an elk enclosure fence.

These wetlands, with their dense cover and lush sedge meadows, provide key habitat for numerous wildlife species. During 2009 field surveys, ample evidence was seen of bedding and browsing areas from big game (elk and deer). These wetlands have had minimal impact from humans, at least on Forest Service lands. There has not been livestock grazing on the Crescent District for several decades, and currently there is known grazing of these wetlands on private lands within the WSR boundary. The Forest Service has not logged in the wet forest stands, although some hand thinning of encroaching lodgepole has been done along the edges of the sedge/grass meadows.

Riparian Corridor – The riparian zone along Crescent Creek is a diverse collection of mixed conifer, montane shrubs, and numerous grass, sedge, and forb species. Although the plant species diversity does vary along the length of the creek, the riparian zone tends to be dominated by lodgepole pine, with inclusions of Engelmann spruce (*Picea englemannii*) and white fir (*Abies concolor*). Montane shrubs such as alder (*Alnus incana*), spiraea, and wild rose form a dense undergrowth along the river edges. Woody debris within the creek creates islands of plant diversity, where moisture-loving species can thrive. Such islands can be carpeted with lush moss mats (*Brachythecium frigidum*), or with robust stands of sedges.

Riparian plant communities are generally rejuvenated by natural disturbances, such as flooding and fire. But both of these prime disturbance factors have been historically excluded from Crescent Creek and adjacent forest communities. The construction of the Crescent Dam in 1922 has resulted in regulated stream flows that have replaced the normal cycle of low and high stream velocities. Without such natural disturbances, the vigor of the riparian vegetation has been impacted.

Some loss of riparian vegetation has occurred on private lands along the Crescent, where landowners have removed native vegetation to create ‘view corridors’ to the river.

Forest Plant Communities – Within the upper reaches of the river corridor, the forest is primarily composed of extensive stands of small diameter lodgepole pine with a sparse understory of manzanita (*Arctostaphylos patula*), upland sedge (*Carex inops*), and wild strawberry (*Fragaria virginiana*).

The central portion of the river corridor is dominated by private lands, so forest stands have been altered through logging, fuels reduction activities, and housing and resort development. The lower portion of the river flows through National Forest land, and was identified for its outstanding and remarkable scenic values. Here Crescent Creek flows through a narrow and twisting canyon, with jagged rock formations jutting out from the steep terrain and the forest is composed of a mixed overstory of lodgepole (*Pinus contorta*) and ponderosa (*Pinus ponderosa*) pine, with an understory that is typical for this forest type: manzanita (*Arctostaphylos patula*), bitterbrush (*Purshia tridentata*), wax current (*Ribes cereum*), bottlebrush squirreltail (*Elymus elymoides*), and Ross’s sedge (*Carex rossii*).

Special Status Plant Species

Although the Crescent Creek WSR lies within the boundary of the Northwest Forest Plan, the boundary designation and management plan do not authorize any habitat-disturbing activities. Because of this, no pre-disturbance surveys for listed botanical species are required.

There are no documented sites of Survey and Manage botanical species within the WSR boundary. However, there are several sites within 0.5 miles of the boundary on Odell Butte. These sites were found during recent botanical surveys within the Ringo EIS planning area.

Invasive Plant Species

Pre-field reviews of the Forest Service Natural Resource Manager (NRM) database indicated that most of the Crescent Creek area is free of invasive plants. Within the WSR boundary infestations are located along the major roadways including the Crescent Lake road, Hwy 58, and the Crescent Cutoff (County road 61) road. These infestations consist of common noxious weeds such as spotted knapweed (*Centaurea stoebe*), butter-n-eggs (*Linaria vulgaris*), oxeye daisy (*Leucanthemum vulgare*), and St. John's wort (*Hypericum perforatum*).

These infestations are treated on an annual basis as part of the District's herbicide treatment program. These include the following sites:

- Oxeye daisy and St. John's wort along the 60 road
- Spotted knapweed, oxeye daisy, and St. John's wort along Hwy 58
- Butter-n-eggs along Hwy 58
- Spotted knapweed on the Crescent dam

In 2016 a survey was conducted to map reed canarygrass (*Phalaris arundinacea*) infestations on Crescent Creek from its confluence with Big Marsh Creek to the Crescent Creek campground. From the results of this survey it was found that 1.6 acres of reed canarygrass is present along this section of the creek. In a subsequent survey in 2017 there were also infestations of bird's-foot trefoil (*Lotus corniculatus*) discovered within and around the reed canarygrass patches. Although not mapped, these infestation patches were observed to be as abundant as those of the reed canarygrass.

Immediate treatment of these infestations would be desired under existing NEPA (National Environmental Policy Act) documentation (USFS 2012). However, Crescent Creek is listed as Critical Habitat for the Oregon spotted frog, which was listed in 2014 as a Threatened species under the Endangered Species Act (USFWS 2014). Due to this listing, additional environmental analysis is needed prior to the use of herbicides within the Crescent Creek area (per. comm. Lauri Turner 2018) and would be done in a separate project-by-project basis.

Other new infestations include small (less than 100 ft²) patches of oxeye daisy within the riparian area along the upper reaches of Crescent Creek near the 60 road. These new sites will be treated in 2018 as part of the District's program to contain and/or eradicate noxious weeds under the *2012 Invasive Plant Treatments for the Deschutes and Ochoco National Forests and the Crooked River National Grassland – Final Supplemental EIS*.

Environmental Consequences

Alternative A: No Action

Because the boundary designation and management plan for Crescent Creek WSR does not authorize any ground-disturbing activities, there are no direct or indirect impacts to TES and P plant species from this project. Under the No Action Alternative, the default boundary would be utilized for the Crescent WSR, and the interim management guidelines used for decision making purposes.

Invasive Plant Species

Under the No Action Alternative, invasive species would likely continue to spread in the absence of any new management activities. Existing management direction could be used to manually control

invasive species. The overall risk of introduction and spread of invasive species by the no-action alternative is low.

Alternative B: Proposed Action

The designation of the final WSR boundary, the re-designation of the underlying land management allocations, and the development of a comprehensive river management plan will have long-term implications for the preservation and conservation of the unique botanical habitats within the Crescent WSR. By establishing the WSR, these habitats will be better protected from future land management activities, such as structure building, road construction, and timber harvesting. With greater protection of this area, comes an increased protection of the native plant communities within the wetland and riparian areas.

Special Status Plant Species

There will be no indirect, direct, or cumulative effects to Survey and Manage botanical species because 1) there are no known Survey and Manage sites within the WSR and 2) the boundary designation and management plan do not authorize any habitat-disturbing activities within the WSR.

Invasive Plant Species

Under Alternative B, there are no herbicide treatments authorized for CCWSRCRMP. Any invasive species/ noxious weeds would be treated under the *2012 Invasive Plant Treatments for the Deschutes and Ochoco National Forests and the Crooked River National Grassland – Final Supplemental EIS*.

Recreation and Scenery

Affected Environment

Alternative A

Recreational opportunities for the designated portion of Crescent Creek are limited due to the unpredictable flows and limited access for recreational opportunities. The designation begins at the mouth of the Crescent Lake dam in a small steep canyon that is inaccessible to general recreationalists. The creek then flows near the Crescent Lake town site, under the railroad, and into private land. No use is observed by the remaining residences of the town site. Limited public recreation occurs for the first four to six miles of the designated river.

The second half of the designated stream, once it leaves private land, wraps around Odell Butte south of County Road 61 (Crescent Cutoff). The steep canyon and limited Forest Service roads restrict access along most of the river. This area does see limited use by fisherman during the summer that either park on County Road 61 and hike down the canyon or drive down one of the low-standard roads to the river. Towards the end of the designation is Crescent Creek campground, a small, somewhat isolated campground that is popular for fishing, bird watching, and camping during hunting season. The campground is operated by a concessionaire from the end of May to the end of September with additional use in the fall for hunting camps. It contains a vault toilet, picnic tables, and fire rings. The campground has river access and views of the unique geology and vegetation in the canyon.

Presently, there are no Forest Service trails along the river but limited use by off-trail hikers, hunters, and mushroom pickers can be seen in the area. Due to the limited developed roads and steep terrain, this area on National Forest land sees very little winter recreation. On the private land, there are a few unauthorized trails that begin on private property but lead to National Forest land. Floating or canoeing/kayaking down the creek is not feasible for any sustained period. Downed trees, low flows, and narrow canyons prevent navigation of the water.

The majority of the developed recreation use occurring is on private property and is predominately associated with summer cabins and residences along the river. Although the management plan will not impact activities on private property, this recreation NEPA analysis considers the recreational experience along the entire stretch of the designated creek including both private and National Forest land. Private landowners in the housing subdivisions commonly have streamside patios, platforms, fences, and signs. These properties present a developed recreational character while still maintaining some natural scenic river attributes. Over the years property owners have made additions including small docks, bridges, and multiple types of bank stabilization efforts. These projects range in size, river aesthetics, and impacts to the physical environment. Several developments include materials and features that are not consistent with a natural scenic river.

Alternative B (Proposed Action)

Although the Management Plan does not propose any on-the-ground activities, it would provide protection to the river corridor for years to come. The current uses of camping, fishing, hunting, and other dispersed recreation would continue. As shown in the capacity analysis, the river corridor could see an increase in use across recreational areas without causing resource damage. The proposed action would ensure that as recreation and use patterns change over the years, the river and its outstanding remarkable values would be protected.

Many of the existing Forest Service standards and guides already provide adequate protection to rivers, riparian areas, and riparian species. For this reason, the additional management plan standards and guides proposed in this CRMP will have no measurable change to recreation resources. Recreation managers will continue to protect sensitive riparian areas and river resources while managing current use and considering additional recreation development. Although boating or rafting is not a current documented use, no wood manipulation can occur to facilitate that activity.

Effects on Recreation Opportunities: Recreation in the Wild and Scenic River corridor would continue to be managed under the existing 1990 Forest Plan direction, as amended. People could continue to recreate as they have done in the past. There would be an increase in user education by teaching low- impact techniques. There is potential for better cooperative management strategies with private land owners within the boundary.

Effects on Visual Quality Objectives and Scenery: Changing the river corridor to Partial Retention for Scenic Views will also ensure that Crescent Creek will be an enjoyable place to visit for years to come (note: currently portions of the management area are designated Partial Retention-Foreground and Middleground Scenic Views). Partial Retention is a visual quality objective meaning human activities must remain visually subordinate to the attributes of the naturally evolved landscape character. Recreationalists and visitors to the area will benefit from scenery management standards as evidence of human manipulation will be minimal. Overall, current recreationalists and visitors to Crescent Creek would benefit from the resource and visual protections that this CRMP provides.

Cumulative Effects: The recreation and visual resources in the Crescent Creek Wild and Scenic River corridor would continue to be managed under the existing 1990 Forest Plan direction as amended by the Northwest Forest Plan and under the protection of the Wild and Scenic Rivers Act. Adopting a comprehensive river management plan would establish programmatic management direction for the Wild and Scenic River corridor. Its development would guide in implementing the direction for preserving outstandingly remarkable values, water quality, and free-flowing condition of the Crescent Creek Wild and Scenic River, but as there are no on the ground actions taking place there would be no direct, indirect, or cumulative effects.

Fisheries

Table 6. Aquatic Species and Effect Determination

Species	Scientific Name	Status	Occurrence	Effects Determination
Aquatic Species				
Columbia River Bull Trout	<i>Salvelinus confluentus</i>	T	HN	NE
Interior Redband Trout	<i>Oncorhynchus mykiss</i> ssp.	S	D	NI

T: Federally Threatened, S: Sensitive species from Regional Forester's list, HN: Habitat Not within the project area or affected by its activities, D: Species Documented in general vicinity of project activities; NI- No Impact, NE- No Effect.

The proposed action would have no effect on fish populations, including: Columbia River Bull Trout, or Interior Redband Trout.

Affected Environment

Crescent Creek was historically occupied by redband trout (*Oncorhynchus mykiss*), bull trout (*Salvelinus confluentus*), reticulate sculpin (*Cottus perplexus*) and mountain white fish (*Prosopium williamsoni*; ODFW 1996). The introduction of non-native species such as brook trout (*Salvelinus fontinalis*) and brown trout (*Salmo trutta*) along with the alteration of flows and blockage of passage between Crescent Lake and Crescent Creek (Crescent Lake Dam) resulted in a decrease in native species. Redband and whitefish still persist, while bull trout have likely been extirpated. Electro-fishing, snorkeling, and environmental DNA (eDNA) surveying have failed to find bull trout in Crescent Creek or its tributaries.

The current flow management results in a reversal of natural flow conditions where peak flows now occur during the summer (irrigation season) and very low base flows occurring during the fall-spring (storage season). As a result, a greatly reduced amount of habitat is available to native fish during the storage season. Spawning, incubation, and emergence are likely adversely affected by these conditions.

The construction of the current Crescent Lake dam has blocked fish passage at all life stages between Crescent Creek and Crescent Lake. As a result, adfluvial life histories such as those expressed by native bull trout have been lost. The blockage of passage has likely contributed to the extirpation of bull trout from this system.

The following excerpt from the Crescent Creek Water Quality Restoration Plan (2002) describes the flow and temperature conditions of Crescent Creek:

“During the summer months the lake (Crescent) surface is exposed to over 200 Joules/square meter at this elevation and latitude, heating the surface water from 43.7 degrees Fahrenheit in the middle of May to 68 degrees Fahrenheit in August. As the lake warms throughout the summer, warmer water and higher volumes are released into Crescent Creek.

Discharge has been altered to peak in August rather than the spring as with Big Marsh and Odell Creeks, two similarly located in elevation and relation to the Cascade crest. Cold Creek and Big Marsh Creek are the two perennial streams contributing to the discharge of Crescent Creek by a total of 230 cfs as if flows the remaining 22 miles before entering the Little Deschutes River. These two cold water tributaries help to offset the warmer lake water by discharging cold water into the system. However, due to the large summer volume released from Crescent Lake, these tributaries have less influence on tempering the downstream water temperatures as they would have under a lower, more natural summer flow regime.”

“With this high sun angle at this latitude, along with a well-functioning riparian zone and stream channel, tree heights would have to exceed their site potential to contribute to increased stream channel shade or would have to encroach into a healthy, well-functioning riparian zone to increase shade cover.”

This means that under natural flow conditions (unaltered by the Crescent Lake dam operations), Crescent Creek would have elevated flow levels during the winter and spring months, then decline through the summer and fall. With declining summer/fall flows originating from Crescent Lake (warm water heated in the sun) the influence of cold springs/tributaries would be more prominent. However, under the current conditions the high volume of warm water being discharged from Crescent Lake during the summer and fall months overwhelms the influence of these cold water sources and dilutes them resulting in elevated temperatures in Crescent Creek.

The current regulation of flows and past land/resource management actions have resulted in simplified channel complexity, thermal complexity and habitat complexity. The historic (pre-European) conditions within Crescent Creek were likely much more complex with a significant amount of logjam complexes, beaver dams complexes, and wetland complexes. These features and their associated processes and habitats are lacking.

The current flow conditions and non-native fish species assemblage in Crescent Creek are likely to continue to inhibit the recovery of native species into the foreseeable future.

Environmental Consequences

Alternative A (No Action)

The No Action Alternative would not create or implement a comprehensive river management plan for Crescent Creek and the watershed would be managed under the current direction: Management Area 17, Wild and Scenic Rivers, of the 1990 Forest Plan. None of the other benefits of having a comprehensive river management plan would be achieved. The No Action Alternative would not meet the project objectives and would not provide an emphasis on restoration to preserve the outstandingly remarkable values identified for the river.

Implementation of the No Action Alternative would have no direct or indirect effects to threatened and endangered species or their critical habitat. With no direct or indirect effects, the implementation of the No Action Alternative would not have cumulative effects on threatened and endangered species or their critical habitat.

Alternative B (Proposed Action)

The proposed action is administrative (to adopt a comprehensive river management plan for Crescent Creek), and no ground-disturbing activities are being proposed. Therefore, there are no direct or indirect effects to threatened and endangered species or their critical habitat expected from this decision.

Of the species listed above, only redband trout are found within Crescent Creek and its tributaries. Implementation of the proposed Wild and Scenic River (WSR) plan would not result in any direct actions that change aquatic habitats within the planning area. The WSR plan would rather formalize protections for the river corridor along Crescent Creek and inhibit future degradations to the Outstanding and Remarkable Values identified.

Cumulative effects: Implementation of the proposed action would have no direct or indirect effects to threatened and endangered species or their designated critical habitats within the zone of influence which is the Crescent Creek WSR boundary. As there are no on-the-ground actions, there would be no effects that could cumulatively add to other reasonably foreseeable future, past, or ongoing actions.

Forestry and Silviculture

Affected Environment

Factors contributing to the current forest vegetation condition include many biotic and abiotic factors. Slope, aspects, soil types, elevations, climate, historic uses (timber removal, native activities), and the last century of fire suppression are mainly responsible for existing vegetative structures, species compositions, and density levels.

Data used for measuring the existing condition came from several models. General plant association groups were derived from the Deschutes National Forest Potential Natural Vegetation layer developed using Gradient Nearest Neighbor (GNN).

There are six forested general plant association groups within the Interim WSR boundary. The table below compares acreage of plant association groups on national forest lands of the current WSR to the proposed boundary. These plant association groups provide for a wide range of vegetation conditions as the forest develops through seral stages.

Table 7. Plant Association Groups

Plant Association Group (PAG)	Current WSR	Proposed WSR
Lodgepole pine dry	1,068 acres	1,259 acres
Lodgepole pine wet	338 acres	543 acres
Mixed conifer dry	346 acres	272 acres
Mixed conifer wet	35 acres	82 acres
Ponderosa pine dry	43 acres	50 acres
Ponderosa pine wet	121 acres	81 acres

Environmental Consequences

Alternative A (No Action)

Conditions, trends, and management of forestry resources will remain the same as current under Alternative A. Since there are no ground-disturbing proposed actions under this alternative, there are no cumulative effects.

Alternative B (Proposed Action)

Generally the adoption of the Draft WSR management plan will have minimal impacts from a vegetation management perspective. The majority of the proposed WSR area is existing wild and scenic or old growth management direction and already has restrictive management direction. Vegetation management activities will continue within the Interim WSR where they are consistent with the WSR management direction.

Cumulative Effects

Neither *Alternative A (No Action Alternative)* nor *Alternative B (Proposed Action)* authorize any on-the-ground actions within the zone of influence which is the Crescent Creek WSR boundary. All future undertakings planned within the project boundary will undergo a separate review process to determine effects. Therefore, there will be no cumulative effects as a result of this decision.

Fuels

Affected Environment

The Crescent Creek project area is made up predominantly of lodgepole pine with some mixed conifer and Ponderosa pine and a number of riparian and/or wetlands throughout. Heavy dead and down debris can be found throughout the area as well. For simplicity Fire Regime (FRCC) was used as the reference condition to determine ecological capability reference condition. FRCC is a measure of departure from reference (pre-settlement or natural or historical) ecological conditions that typically result in alterations of native ecosystem components. These ecosystem components include attributes such as species composition, structural stage, stand age, canopy closure, and fuel loadings. One or more of the following activities may have caused departures: fire suppression, timber harvesting, livestock grazing, introduction and establishment of exotic plant species, introduced insects or diseases, or other management activities. FRCC includes three condition classes for each fire regime.

All vegetation and fuel conditions or wildland fire situations fit within one of the three classes. Condition Class (CC) 1 represents current values that are 0 – 33% different from the reference values (CC1 is often defined as being “ within HRV ”), CC2 includes values that are > 33 – 66% different (“ moderately departed ”), and CC3 represents values > 67% different (“ highly departed ”). The three classes are based on low (FRCC 1), moderate (FRCC 2), and high (FRCC 3) departure from the central tendency of the natural regime. Low departure is considered to be within the natural range of variability, while moderate and high departures are outside. Characteristic vegetation and fuel conditions are considered to be those that occurred within the natural fire regime. Uncharacteristic conditions are considered to be those that did not occur within the natural fire regime.

The fire regime groups are a classification of fire regimes into a discrete number of categories based on frequency and severity. The FRCC classification uses five fire regime groups:

- Group I - frequent (0-35 years), low severity
- Group II - frequent (0-35 years), stand replacement severity
- Group III - 35-100+ years, mixed severity
- Group IV - 35-100+ years, stand replacement severity
- Group V - 200+ years, stand replacement severity.

The majority of the project area is in a moderate departure from the natural historical range value (HRV). Smaller portions are in a High and Low departure from historical range value. The fire regime for the project area is mostly in a IV LP (Lodgepole) of 35-100 plus year frequency and high severity followed by a less amount in III MC (mixed conifer) of 35 -100 plus year frequency and mixed severity.

Environmental Consequences

Alternative A (No Action)

Direct and Indirect Effects:

There are no fuels management actions being proposed under this alternative, so there would be little change or departure from current conditions. Natural processes and past actions, particularly fire suppression, have created excessive fuel loading. These trends would continue as long as no actions are implemented. Forest management such as prescribed fire and timber harvest will continue to promote a resilient landscape and provide protections for communities at risk, forest health, and watershed health outside of the project area. Inside the project boundary there would be no change or effects to wildfire behavior resulting from implementing the Wild and Scenic River Management Plan.

Alternative B (Proposed Action)**Direct and Indirect Effects**

Natural processes and past actions, particularly fire suppression, have created excessive fuel loading. Future fuels projects should consider the use of hand thinning, mechanical thinning, or both and prescribed burning to meet objectives and goals in the 1990 Forest Plan. Such projects, would be analyzed at the time the project is proposed.

Cumulative effects:

Neither *Alternative A (No Action Alternative)* nor *Alternative B (Proposed Action)* authorize any on-the-ground actions within the zone of influence which is the Crescent Creek WSR boundary. All future undertakings planned within the project boundary will undergo a separate review process to determine effects. Therefore, there will be no cumulative effects as a result of this decision.

Hydrology

Affected Environment

Crescent Creek is the outflow from Crescent Lake. It is a slow moving stream with an average gradient drop of less than 45 feet per mile. It is regulated by the Tumalo Irrigation District for irrigation purposes. Temperatures are influenced by the regulated flows and average 42 degrees F for the summer months. Low flows are common during the months of October through April when the lake is recharged for summer irrigation withdrawal. High flows are usually moderate (averaging 146 cubic feet per second, CFS) during the months of June through September. Flows for irrigation purposes may exceed 230 CFS during specific times during June through September. The soils in the area are generally porous and absorb rainfall, therefore the creek experiences very little fluctuation in the flow levels from rainfall.

The activity at and around the boat ramp located directly above the dam may influence the water quality of Crescent Creek. The location of docking and fueling facilities directly above the dam may increase the risk of the accidental release of minor impurities into the creek.

Operations at the Crescent wye also have the potential to add materials and waste for the operations of the railroad.

The confluence of Big Marsh Creek with Crescent Creek occurs just upstream of the crossing with Highway 58. The naturally occurring flow regimes of Big Marsh Creek moderate the effects of the controlled flows from Crescent Creek and the creek experiences fewer fluctuations. The tannic acid from the organic matter decomposition occurring in Big Marsh colors the water a tea color downstream though the clarity of the water is maintained. This section of stream is dramatically different from the upper section mostly due to the steep canyon that ends near the crossing with the Crescent Cutoff Road.

Environmental Consequences***Alternative A (No Action)***

Using the existing Federal and State guidelines, such as those in Northwest Forest Plan, Aquatic Conservation Strategy (ACS), State water quality standards, and the Deschutes LRMP, would be adequate to protect the hydrology resource within the Crescent Creek Wild and Scenic boundaries. However, unfocused management and minimal monitoring are not moving conditions toward the desired condition. Additionally, by not adopting a Comprehensive River Management Plan, the Forest Service would not be in compliance with the Wild and Scenic River Act.

Alternative B (Proposed Action)

Existing guidelines in Federal and State policies such as the Northwest Forest Plan, Aquatic Conservation Strategy, State water quality standards and the Deschutes LRMP, would be adequate to protect the hydrology resources. However, to improve clarity, management, and enforcement, several new standards and guidelines for the Crescent Creek Wild and Scenic River are proposed in Alternative B.

Under Alternative B, recreation would be better monitored and regulated where necessary. Thresholds would be developed for recreation so it is easier to determine if unacceptable resource damage is occurring and what remedial action(s) (including closure and rehabilitation) would need to occur. This alternative would rehabilitate current issues that are contributing sediment and better manage/monitor future sites so as to limit sediment concerns.

There would be no negative effects but potentially a positive effect to water quality through adoption of the CRMP. Additional standards and guidelines under Alternative B could help reduce user impacts in riparian areas, thereby providing better riparian vegetation for stream shade. Identification of road issues and remediation of these issues would help decrease sedimentation into the waterway.

Cumulative Effects

The hydrology cumulative effects analysis area (zone of influence) includes all watersheds (10th field) that drain directly into the Crescent Creek (1707030202). Effects to hydrology resource from the action alternative in the EA would incrementally add to cumulative effects because of the beneficial effects predicted by the added guidelines. Neither *Alternative A (No Action Alternative)* nor *Alternative B (Proposed Action)* authorize any on-the-ground actions within the Crescent Creek WSR boundary. All future undertakings planned within the project boundary will undergo a separate review process to determine effects. Therefore, there will be no cumulative effects as a result of this decision.

Wildlife**Introduction**

An analysis of wildlife habitats was performed for the proposed Crescent Creek Wild and Scenic River Comprehensive River Management Plan Corridor boundary (WSR) and Management Plan on the Crescent Ranger District of the Deschutes National Forest. The potential effects finalizing the designation of the WSR Boundary and proposed Management Plan on viable populations or habitat of Proposed, Threatened, Endangered and Region 6 Forester's Sensitive wildlife species (TES), Management Indicator Species (MIS), Birds of Conservation Concern (BCC), Landbird Conservation Strategy Focal Species (LBFS), and Northwest Forest Plan Survey and Manage (SM), were evaluated. Designation of a final Wild and Scenic River Corridor boundary changes some Forest Plan Allocations potentially altering the consideration for wildlife species and habitat. The Management Plan is a management direction document addressing the allocation changes and future management of the lands within the WSR Corridor. The plan itself does not involve any on-the-ground management activities that could cause effects to wildlife species. Any future proposed projects under the management plan would need site-specific analyses and documentation of effects to these species.

The following is a summary of the analysis. A full analysis can be found within the Wildlife Report.

No Action Alternative A

The Deschutes National Forest Land and Resource Management Plan (LRMP) designated an interim boundary for the WSR corridor. It includes Standards and Guidelines (S&G) for actions within the

WSR Corridor. Additional allocations include old growth, riparian reserves and scenic values. The current management allocations, standards and guidelines would remain the same with this alternatives.

Proposed Action Alternative B

The proposed action consists of the following specific actions: (1) Establish final WSR corridor boundaries for the designated river segment; and (2) prepare a management plan that includes a monitoring program.

The management plan for the designated segment of Crescent Creek would consist of existing direction in the Forest Plan for Old Growth Management Areas and Riparian Reserves; and amendments for changing Intensive Recreation, General Forest and Scenic Views, as well as defining the WSR Standard and Guidelines found necessary for protecting the Geological and Scenic Vegetation Outstandingly Remarkable Values (ORVs). Monitoring also will be a prominent part of the plan. For jurisdictions that do not fall under Forest Service authority (e.g. private lands), the plan may make recommendations found necessary to protect or enhance river values. Actual responsibility and authority to implement those recommendations would remain with the appropriate authorities.

Desired Future Condition

A diversity of wildlife (birds, mammals, and amphibians) find habitat within the riparian area and upland forests that make up the WSR corridor. The diversity of wildlife is recognized and managed as part of a healthy riverine ecosystem. The need for habitat and security for TES, management indicator species (MIS), and other species of special concern (Birds of Conservation Concern - BCC, Landbird Focal Species - LBFS, Survey and Manage species - SM) is recognized and refugia are maintained, increased, and protected allowing wildlife to successfully live, reproduce and/or disperse through the WSR corridor.

Existing Condition

Wildlife Habitats

The Crescent Creek WSR corridor supports a variety of wildlife populations. Most are typical of faunal species found within other river systems in Central Oregon. Riparian habitat includes freshwater shrub/forest, fen, and wet meadows. Upland habitat includes lodgepole pine, lodgepole pine/spruce, ponderosa pine and mixed conifer. Unique habitats include cliff, lava, and other rock formations. Although the creek offers a variety of aquatic and terrestrial habitats, the area does not contain nationally or regionally important or unique habitats or populations of wildlife species. Confirmed and unconfirmed sightings include: Oregon spotted frog, northern spotted owl, gray wolf, wolverine, western bumblebee, cascade frog, brown creeper, great blue heron, black-backed woodpecker, northern bald eagle, goshawk, red-tailed hawk, Cooper's hawk, American marten and bobcat. This diversity of wildlife is recognized as part of a healthy riverine ecosystem.

Establishment of the final WSR boundaries for the designated river segment of Crescent Creek and development of a management plan would adjust allocations for management within the Wild and Scenic River corridor. Overall there would be a reduction of intensive recreation (administratively withdrawn) and general forest (matrix) and a corresponding increase in the Wild and Scenic River allocation (congressionally reserved). A large part of the two allocations were also within a Riparian Reserve area which is more restrictive to vegetation management and recreation infrastructure. Wild and Scenic River allocation provides more consideration for wildlife species and their habitats.

The plan itself does not implement on-the-ground activities that could cause effects. The plan implements existing Forest Plan S&Gs or new S&Gs to further protect the WSR corridor values.

Any future projects proposed contained within the Crescent Creek Wild & Scenic River Comprehensive River Management Plan final boundary would need site-specific analysis and documentation of effects.

Proposed, Threatened, Endangered and R6 Sensitive (TES) Wildlife Species

The Threatened and Endangered list from USFWS and the Forest Service Region 6 Sensitive Species list, as specified in the Regional Foresters July 21, 2015 letter, was reviewed for species known or suspected to occur on the Deschutes National Forest. Table 8 shows those TES species that are present or have potential habitat within the proposed WSR boundaries.

Table 8. TES Species that are Present or Have Potential Habitat Within the Proposed WSR Boundary

Species	Habitat Present
Proposed (P), Threatened (T), Endangered (E) Species	
Oregon spotted frog (T) and Critical Habitat	Life cycle habitats include: emergent wetlands in marsh, sedge fens, riverine or beaver ponds; with deep ponds or well oxygenated springs in/or adjacent to permanent water
Northern spotted owl (T) and Critical Habitat (Also MIS)	Nesting, roosting, foraging habitat consist of late and old structure, multi-story stands.
Gray wolf (E)	Habitat generalist dependent on remote areas with sufficient big game species available year round.
Wolverine (P) (Also MIS)	Mixed, high elevation forest, talus slopes, persistent spring snow.
R6 Sensitive Species (Federal Candidates for listing*)	
Northern bald eagle (Also MIS and BCC)	Over-mature ponderosa pine or mixed conifer forest for nesting or with-roosting in proximity to foraging area consisting of fish-bearing lakes and/or rivers.
Bufflehead	Utilizes tree cavities close to water.
Harlequin duck	Nest along fast-flowing rivers and mountain streams.
American peregrine falcon (Also BCC)	Nest on cliffs greater than 75 feet in a variety of habitat types, riparian habitats for travel and foraging.
White-headed woodpecker (Also MIS, BCC, LBCS and SM)	Open old growth ponderosa pine forest with little shrub cover and a mosaic of denser areas. Two pine species to provide a winter seed source.
Northern waterthrush	Nests in dense riparian thickets of willow, alder, and/or lodgepole pine with a willow component adjacent to slow moving water.
Pacific fisher	Dense forest with a coniferous component, large snags or decadent live trees and logs for denning and resting, and complex physical structure to support prey.
Pallid bat (Also SM)	Roosts in rock crevices and buildings, occasionally in caves, mines, rock piles and tree cavities.
Spotted bat (Also SM)	Roots in caves, cracks and crevices in cliffs and canyons.
Fringed myotis (Also SM)	Roosts in caves, mines, rock crevices and other protected sites. Forage close to vegetative canopy.
Crater Lake tightcoil (Also SM)	Found in riparian habitats with permanent surface moisture.
Shiny tightcoil	Resides in moist microsites primarily under deciduous vegetation, and/or shaded basalt cliff with talus with riparian influence.
Johnson's hairstreak	Prefers older coniferous forests with western dwarf mistletoe for the caterpillar stage and growing plants that provide nectar for the adult.

Species	Habitat Present
Western bumblebee	May be found in areas with a diverse assemblage of native flora such that flowers would be constantly available throughout the active season of April to September.

The remaining TES species that are **not present nor have suitable habitat** present or in close proximity to the WSR corridor include: Sierra Nevada red fox, Townsend’s big-eared bat, Lewis’s woodpecker, tricolor blackbird, yellow rail, greater sage grouse, horned grebe, Tule goose, Columbia spotted frog, and silver-bordered fritillary.

Northern spotted owl critical habitat as well as Oregon spotted frog critical habitat overlap the Crescent Creek corridor. Northern spotted owl surveys indicate utilization of the corridor for foraging and dispersal. Data locations from surveys indicate a small population of Oregon spotted frogs are present along sections of the Crescent Creek corridor. While there is confirmed wolf use of the corridor for dispersal (OR7 and OR33) there are no established use areas that overlap the WSR corridor.

The effects to all TES species were evaluated for the project. A conflict determination and significant effect determination was made for the project. There would be no adverse effects to TES species expected from the management plan because the plan itself does not implement on-the-ground activities that could cause effects. Additionally, the plan implements existing Forest Plan S&Gs or new S&Gs to further protect the Wild & Scenic River corridor values. Any future projects proposed to carry out the Management Plan would need site-specific analysis and documentation for effects to TES species. Establishment of the final WSR boundaries for the designated river segment of Crescent Creek, re-designation of the underlying land management allocations, and development of a comprehensive river management plan would have “**No Effect**” on any TES species or the Designated Critical Habitat of the northern spotted owl or Oregon spotted frog.

Management Indicator Species (MIS)

The Deschutes National Forest LRMP designated select wildlife species as MIS because their welfare could be used as an indicator of other species dependent upon similar habitat conditions. Table 9 shows those species that are known to be present or have habitat present within the proposed Crescent Creek corridor. Species that are also TES are only listed in Table 8 and not duplicated in Table 9.

Table 9. MIS Species that are Present or Have Habitat Within the Proposed Crescent Creek Corridor

Species	Habitat Present
Management Indicator Species (MIS)	
Northern Goshawk	Open forests with a mosaic of large trees, snags and down wood suitable for foraging, nesting and post-fledgling areas. Unforested habitats
American Marten	Mixed conifer and high elevation hemlock/lodgepole pine late-successional forests
Cooper’s Hawk	Deciduous and mixed conifer forest, open woodlands and riparian woodlands. Found in large forests, but more likely to occur near forest edges and clearings near lakes and streams
Sharp-shinned Hawk	Deciduous and mixed conifer forest, open woodlands and riparian woodlands. Found in large forests, but more likely to occur near forest edges and clearings near lakes and streams
Red-tailed Hawk	Large trees in mixed habitat
Great Gray Owl (Also SM)	Mature to old growth coniferous and mixed conifer/lodgepole pine forests adjacent to opening in forests, usually meadows

Great Blue Heron	Estuaries, Streams, Marshes, Lakes
Mule Deer	Mosaic of early, forage-producing stages and later, cover-forming stages of forests, i.e. conifer, ponderosa pine, lodgepole pine and mixed ponderosa/lodgepole pine forest with shrub understory, in close proximity
Elk	Mosaic of early, forage-producing stages and later, cover-forming stages of forests, in close proximity
Red-naped Sapsucker	Pine/aspen forests with riparian habitat
Pileated Woodpecker	Mature and Old Growth Mixed Conifer Forest with abundant dead wood
Black-backed Woodpecker (Also SM, BCC, Focal Species)	Conifer forests including ponderosa pine, lodgepole pine, Douglas-fir/mixed conifer with high proportions of dead trees
Three-toed Woodpecker	Lodgepole pine, mixed-conifer, Douglas -fir/mixed conifer forests at high elevations
Hairy Woodpecker	Mixed-conifer and ponderosa pine forests adjacent to deciduous stands
Hairy Woodpecker	Mixed-conifer and ponderosa pine forests adjacent to deciduous stands
Downy Woodpecker	Aspen stands with riparian habitat, Less common in mixed conifer and ponderosa pine forests
Williamson's Sapsucker (Also BCC and LBFS)	Mid- to high-elevation mature or old-growth conifer forests with fairly open canopy cover
Northern Flicker	Open forests and forests edges adjacent to open country, Terrestrial habitats

While habitat may be present for MIS species, the Crescent Creek Wild and Scenic River Comprehensive River Management Plan would not alter existing Forest Plan S&Gs for OGMA or Riparian Reserves. It provides new additional S&Gs to further protect the Crescent Creek corridor values. Implementation of the proposed WSR boundaries for the designated river segment of Crescent Creek, re-designation of the underlying land management allocations, and the development of a comprehensive river management plan would not alter habitat for any MIS species, nor would they contribute toward a change in trends of viability for any of the MIS species on the Crescent Ranger District or Deschutes National Forest.

Birds of Conservation Concern (BCC) and Landbird Conservation Strategy Focal Species (LBFS)

The “Birds of Conservation Concern 2008” identifies species, subspecies, and populations of all migratory non-game birds that without additional conservation protection actions, are likely to become candidates for listing under the Endangered Species Act of 1973. Bird Conservation Regions (BCRs) were developed based on similar geographic parameters. The Crescent Ranger District and the proposed Crescent Creek corridor is within BCR 9, Great Basin. Species found with BCR 9 overlap with TES, MIS and LBFS.

The Forest Service prepared a National Landbird Strategic Plan (January 2016) to maintain, restore, and protect habitats necessary to sustain healthy migratory and resident bird populations to achieve biological objectives. Individuals from multiple agencies and organizations within the Oregon-Washington Chapter of Partners in Flight participated in developing a publication for conserving landbirds in this region. *A Conservation Strategy for Landbirds of the East-Slope of the Cascade Mountains in Oregon and Washington* was published in June 2000 (Altman 2000). This strategy has been used since its development in planning and project analysis. The Crescent Creek corridor falls within the Central Oregon subprovince. The landbird species selected in the conservation strategy represent focal species for habitat types or features considered at risk.

Table 10 displays the BCC and LBFS that have suitable habitat present in the Crescent Creek corridor. Those species previously identified in TES or MIS are not included in the following table.

Table 10: BCC and LBFS with Suitable Habitat Present in the Crescent Creek Corridor

Species	Habitat Present
Birds of Conservation Concern (BCC)	
Flammulated Owl (Also LBFS and SM)	Associated with ponderosa pine forests and mixed conifer stands with a mean 67% canopy closure, open understory with dense patches of saplings or shrubs.
Willow Flycatcher (c) non-listed subspecies or population of T or E species.	Associated with riparian shrub dominated habitats, especially brushy/willow thickets. In SE WA also found in xeric brushy uplands.
Landbird Conservation Strategy Focal Species (LBFS)	
Pygmy nuthatch (Also SM)	Pine Forests including Ponderosa pine, lodgepole pine, or mixed conifer consisting of ponderosa pine/ Douglas-fir, Focal Species for large trees in ponderosa pine.
Brown Creeper	Prefer mature conifer forests with large live trees for foraging and large loose-barked trees for nesting. Focal Species for large trees in mixed conifer late-successional habitat.
Hermit thrush	Mountain forests with dense understory. Focal Species for multi-layered/dense canopy in mixed conifer late-successional

There are no proposed activities that would alter or change existing habitat or conditions for any Birds of Conservation Concern or Landbird Focal species.

Northwest Forest Plan Survey and Manage

In 1994 the Northwest Forest Plan (NWFP) developed a system of reserves, Aquatic Conservation Strategy, and various standards and guidelines for the protection of old growth associated species. Mitigation measures were also included for species that were rare, or thought to be rare due to a lack of information about them. These species collectively known as Survey and Manage (SM) species were included in standards and guidelines under Survey and Manage, Protection Buffers, and Protect Sites from Grazing. The plan was amended in January 2001. This decision amended the NWFP Survey and Manage and related standards and guidelines to add clarity, remove duplication, increase or decrease levels of management for specific species based on new information, and established a process for making changes to management for individual species in the future (USDA 2001 ROD pgs 1-3).

Survey and Manage animal species for the Deschutes National Forest includes the great gray owl, evening fieldslug, Crater Lake tightcoil snail, white-headed woodpecker, black-backed woodpecker, pygmy nuthatch, flammulated owl, and bats.

Survey and Manage species that occur or have habitat within the Crescent Creek WSR corridor and have not been included in previous tables includes the evening fieldslug. This small slug is associated with perennially wet meadows in forested habitats. Microsites where it has been found include a variety of low vegetation, litter, and debris. Habitat for the evening fieldslug occurs within the WSR corridor.

Because the designation of the final boundary for the Crescent Creek WSR Corridor, re-designation of the underlying land management allocations, and the development of management plan does not include ground altering activities there would be no change in habitat for any SM animal species.

Mitigation Measures

No mitigation measures are proposed for this action because the Management Plan itself does not include any ground-disturbing activities. Consequently, there is no potential for disturbance to nesting/denning animals, and no activities are proposed that might modify Proposed, Threatened, Endangered and/or R6 Sensitive species habitat.

Transportation

Affected Environment

The Crescent Creek Wild and Scenic River area contains approximately 13.42 miles of roads under public jurisdictions, with about 9.89 miles of that being roads under Forest Service jurisdiction. The existing road system is unevenly dispersed throughout the analysis area, with the majority being in the northwestern and eastern portions. There are unknown miles of roads under private jurisdiction along Crescent Creek in the northwestern portion of the analysis area.

The bulk of roads within the analysis area are located on rather gentle terrain, with ground slopes seldom exceeding 20%. Roads can be sporadically found in midslope positions with ground slopes at or above 30%. Most of these mid-slope roads are along the east side of the analysis area between Crescent Creek and the northern boundary, the 61 Road (Crescent Cutoff).

Portions of the existing road system in the northwestern portion of the analysis area are employed by four specific users in support of their commercial/utility endeavors; Union Pacific Railroad holds road use permits to maintain access to their main rail line running through a portion of the analysis area, Mid-State Electric Cooperative and CenturyTel use part of the existing road system to service their electrical and phone lines that pass through the analysis area and Hoodoo Recreation Services operate and maintain Crescent Lake Resort and Campground. These uses, although not a significant component of the total usage, have occurred for many years (especially in the case of the railroad access for the former Southern Pacific Railroad) and will continue into the foreseeable future.

Table 11. Summary of Existing National Forest Transportation Motorized Route Designations

Existing National Forest Transportation System Motorized Routes	Existing Condition
Total Road Miles Designated Open	6.60
Total Road Miles Designated Closed	3.29
Road Miles Designated Open in Riparian Reserves	0.02
Road Miles Designated Closed in Riparian Reserves	0.00
Open Road Stream Crossings	0
Closed Road Stream Crossings	0
Open Road Bridge Crossing	1

Environmental Consequences

Alternative A (No Action)

Under Alternative A, the existing road system would experience no change to its current status and condition. Roads that are currently in a stored status (ML 1) would remain closed and open roads

(ML 2, ML 3 and ML-4) would continue to provide access for recreational, commercial, and administrative functions in the same manner that they currently do. Open roads would receive no maintenance beyond that which is normally scheduled, which is generally devoted to higher standard roads.

Alternative B (Proposed Action)

The designation of the final boundary designation for the Crescent Creek WSR Corridor, re-designation of the underlying land management allocations, and the development of management plan does not authorize any on-the-ground actions within the Crescent Creek WSR boundary on Federal land for *Alternative B (Proposed Action)*. All future undertakings planned within the project boundary will undergo a separate review process to determine effects pursuant to the National Environmental Policy Act of 1969. Therefore, there will be no effects (direct, indirect, nor cumulative) to transportation as a result of this decision.

Other Disclosures

Deschutes National Forest Land and Resource Management Plan

The Deschutes National Forest Land and Resource Management Plan of 1990 (LRMP) as amended, provides guidance for management activities. The LRMP establishes goals, objectives, standards, and guidelines for each specific management area of the Forest, as well as Forest-wide Standard and Guidelines.

The LRMP identifies the following management allocations within the project area:

MA-17 Wild and Scenic Rivers where the goal is “To protect and enhance those outstandingly remarkable values that qualify segments of theCrescent and Squaw Creeks for inclusion in the national Wild and Scenic Rivers System.”

M15-Old Growth where the goal is to: “To provide naturally evolving old growth forest ecosystems for (1) habitat for plant and animal species associated with old growth forest ecosystems, (2) representations of landscape ecology, (3) public enjoyment of large, old-tree environments, and (4) the needs of the public from an aesthetic spiritual sense.”

Adoption of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment will result in a permanent Forest Plan Amendment to adjust and finalize the current boundary and change the underlying LRMP allocations, see Figure 2 and Figure 3 and Table 2 and Table 3 for change proposed in the Deschutes LRMP and the Northwest Forest Plan.

Northwest Forest Plan

This project is within the boundaries of the Northwest Forest Plan, therefore Northwest Forest Plan (NWFP) direction from the January 2001 *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* as altered by the 2011 Consent Decree and the May 13, 2014 Letter of Direction applies to this project.

Plants- There are no known Survey and Manage sites within the Crescent Creek WSR. The Proposed boundary designation and land management allocation changes does not involve any habitat-disturbing activities within old growth forest stands, so there is not a requirement for botanical surveys for listed Survey and Manage species.

Wildlife- Survey and Manage animal species for the Deschutes National Forest includes the great gray owl, evening fieldslug, Crater Lake tightcoil snail, white-headed woodpecker, black-backed woodpecker, pygmy nuthatch, flammulated owl, and bats.

Survey and Manage species that occur or have habitat within the Crescent Creek WSR corridor and have not been included in previous tables includes the evening fieldslug. This small slug is associated with perennially wet meadows in forested habitats. Microsites where it has been found include a variety of low vegetation, litter, and debris. Habitat for the evening fieldslug occurs within the WSR corridor.

Because the designation of the final boundary for the Crescent Creek WSR Corridor, re-designation of the underlying land management allocations, and the development of management plan does not include ground altering activities there would be no change in habitat for any SM animal species.

Executive Order 13112 (Invasive Species)

This 1999 order requires Federal agencies whose actions may affect the status of invasive species to identify those actions and within budgetary limits: “(i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species... (iii) monitor invasive species populations... (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded;... (vi) promote public education on invasive species... and (3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species... unless, pursuant to guidelines that it has prescribed, the agency had determined and made public... that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.”

There is a no risk for spreading or introducing noxious weeds for the Action Alternative in this project as this alternative has no actions on-the-ground.

Clean Water Act

The State of Oregon, as directed by the Clean Water Act (CWA) and the Environmental Protection Agency, is responsible for the protection of rivers and other bodies of water in the public interest. To show that water quality is being protected, states are required by the CWA to adopt water quality standards which must be approved by the Environmental Protection Agency. Best Management Practices (BMP) and state-wide management plans are a requirement of the CWA and are used to meet water quality standards. The proposed action is consistent with the Clean Water Act as there are no on-the-ground actions associated with this EA.

Clean Air Act

The proposed action is consistent with the Clean Air Act. The Forest Service, in cooperation with the Department of Environmental Quality (DEQ), the Oregon Department of Forestry, and the Bureau of Land Management, has a Memorandum of Understanding (MOU) to establish a framework for implementing an air quality program in northeast Oregon. Any burning would be conducted in compliance with the State of Oregon Smoke Management System and would meet smoke management objectives for total emissions.

Wetlands and Floodplains

Executive Orders 11988 and 11990 direct Federal agencies to avoid, to the extent possible, both short-term and long-term adverse impacts associated with the modifications of floodplains and wetlands. No wetlands or floodplains would be affected by the proposed action, because there are no ground disturbing actions.

Civil Rights and Environmental Justice

Civil Rights legislation and Executive Order 12898 (Environmental Justice) direct an analysis of the proposed alternative as it relates to specific subsets of the American population. The subsets of the general population include ethnic minorities, people with disabilities, and low-income groups. The proposed action would not pose any adverse effect to those populations as there would be no change in location, or services offered to all subsets of the public.

Prime Lands (Farm, Range, and Forest)

There are no lands within the boundaries of the Deschutes National Forest that meet the definition of prime farmland, or are considered prime farmland as discussed in the Deschutes LMRP. The Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment project area is not considered “prime” farmland or forestland. This project, therefore, would not affect any prime lands.

Congressionally Designated Areas Such as Wilderness, Wild and Scenic Rivers, and National Recreation Areas

There are no Wilderness or National Recreation Areas within the project. Diamond Peak Wilderness is directly adjacent to the northwest WSR boundary on the opposite side of the railroad tracks.

Inventoried Roadless Areas or Potential Wilderness Areas

There are no inventoried roadless areas in or near the project area. The nearest inventoried roadless area is Maiden Peak, located approximately ten miles to the northwest of the project area.

There are no Potential Wilderness Areas that meet the criteria of Forest Service Handbook 1909.12 Chapter 70 (71.1) within the project area. The proposed boundary has been impacted with development including; buildings, roads, parking areas, tree removal, and other evidence of human activities precluding the area from being included in a potential wilderness inventory.

Evaluation of the Forest Plan Amendment

As discussed previously in this EA, the Forest Service has identified a need to amend the 1990 Deschutes Land and Resource Management Plan (LRMP), to establish the final Wild and Scenic River boundary and change the underlying management allocations. In addition, the Crescent Creek Wild and Scenic River Management Plan incorporates additional Standards and Guidelines.

Based on the direction provided in 36 CFR 219, the Responsible Official must determine the appropriate scope and scale of forest plan amendments and which substantive provisions of 36 CFR 219.8 through 219.11 apply to the project. Based on the need for change, the site-specific conditions for the project area, and the relevant forest-specific information and data, the following substantive requirements of 36 CFR 219.8 through 219.11 apply to the proposed amendment to adjust the current interim boundary and underlying management allocations for the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment. For the Wild and Scenic River the following substantive provision was found applicable to the Crescent Creek Wild and Scenic River Comprehensive River Management Plan EA Purpose and Need:

219.10(b)(v) Protection of designated wild and scenic rivers as well as management of rivers found eligible or determined suitable for the National Wild and Scenic River system to protect the values that provide the basis for their suitability for inclusion in the system.

In 1988 Congress designated Crescent Creek as a Wild and Scenic “Recreational” River thus

consideration of the final boundary and the creation of a Crescent Creek Wild and Scenic River Comprehensive River Management Plan applies to the need for change.

The following four provisions would be applicable to the effects from implementing this programmatic Forest Plan Amendment.

219.8(a)(2) Air, soil, and water.

Consideration for soil and water is directly integrated into the development of the need to change the interim boundary and management allocations in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment but does not substantially change existing Forest Plan protections found in Management Area 17. Additional standards and guides relating to water quality are included in the Comprehensive River Management Plan (CRMP). By changing the underlying land management allocations within the river corridor to Wild and Scenic it will provide additional high water quality standards to ensure water integrity and protection of the free-flowing condition of Crescent Creek.

219.9(a)(1) Ecosystem integrity.

The need to change the interim boundary and management allocations in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment does apply to Ecosystem Integrity. The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the outstanding remarkable river values (ORV) for which Crescent Creek was included in the Wild and Scenic Rivers System. Geology and Scenic Views are the Outstandingly Remarkable Values (ORVs) which were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015). These are in addition to ensuring free-flow condition and high water quality from the Wild and Scenic River Act of 1988.

219.10(a)(1) Aesthetic values, air quality, cultural and heritage resources, ecosystem services, fish and wildlife species, forage, geologic features, grazing and rangelands, habitat and habitat connectivity, recreation settings and opportunities, riparian areas, scenery, soil, surface and subsurface water quality, timber, trails, vegetation, viewsheds, wilderness, and other relevant resources and uses.

This substantive requirement directly applies to the need to create a Comprehensive River Management Plan (CRMP). The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) of Geology and Scenic Views were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015).

219.10(a)(2) Renewable and nonrenewable energy and mineral resources.

The need to change the interim boundary and management allocations in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan EA does apply to mineral resources. A new standard and guideline was created with the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) relating to mineral resources states: The location of claims under current mining laws will be continued (no locatable mineral are known to be present within the corridor); mineral leasing and the disposal of saleable minerals will only be allowed if such activities would protect and enhance Outstanding Remarkable Values or free-flow/water quality benefits. The location of claims under current mining laws will be continued (no locatable mineral are known to be present within the corridor); mineral leasing and the disposal of saleable minerals will only be allowed if such activities would protect and enhance Outstanding

Remarkable Values or free-flow/ water quality benefits.

Direct and Indirect Effects

This section discusses the direct and indirect effects of the proposed amendment in Alternatives A and B specific to the substantive requirements of 36 CFR 219.8 through 219.11. Effects are discussed related to the same factors for the No Action Alternative for comparison.

Alternative A (No Action)

Under Alternative A, there would be no change to the land allocations along the current Wild and Scenic River corridor. All existing allocations under the Deschutes Land and Resource Management Plan as amended by the Northwest Forest Plan would remain in effect as well as the interim Wild and Scenic boundary. No Comprehensive River Management Plan would be created and the area would continue under the interim direction of the Deschutes Land and Resource Management Plan, as amended.

Alternative B (Proposed Action)

By changing and finalizing the final boundary and underlying land allocations it would allow for additional Standards and Guidelines to help protect the outstanding remarkable values of geology and scenic views, as well as preserve the free-flowing nature of the river and the water quality. As this project proposes no on-the-ground actions there would be no direct or indirect effects and would be consistent with substantive provisions 219.8(a)(2), 219.9(a)(1), 219.10(a)(1), 219.10(a)(2) and 219.10(b)(v).

Cumulative Effects

The zone of influence for cumulative effects is the Crescent Creek Wild and Scenic River Comprehensive River Management Plan project area. The past, present and reasonable foreseeable future projects table has been reviewed (Table 4) and only the Ringo project overlaps the Crescent Creek Wild and Scenic River Corridor. Those cumulative effects have been addressed in the Ringo EIS (2018). As the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment project has no on-the-ground actions there will be no cumulative effects.

Relationship of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Project Forest Plan Amendment to the Substantive Requirements of the 2012 Planning Rule

Substantive requirements of the 2012 Planning Rule, 36 CFR 219.8 -219.11, and their applicability or inapplicability to project specific amendments to the 1990 Deschutes Land and Resource Management Plan. The Crescent Creek Wild and Scenic River Comprehensive River Management Plan project proposes one Forest Plan amendment that is specific to the project area and proposed activities. The amendment proposes changes to the final Wild and Scenic River boundary and changing of the land management allocations within the finalized boundary. The amendment addresses Management Area 17 Wild and Scenic Rivers as defined in the Deschutes National Forest LRMP.

Table 12. Substantive Provisions from 2012 Planning Rule

Substantive requirement under 36 Code of Federal Regulations (CFR) 219.8 – 219.11	Applicability or inapplicability of the substantive requirement to the programmatic amendment proposed in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment
36 CFR 219.8 - Sustainability	
(a) Ecological sustainability.	
(1) Ecosystem integrity.	
219.8(a)(1)(i) Interdependence of terrestrial and aquatic ecosystems in the plan area.	The interdependence of terrestrial and aquatic ecosystems does not directly apply to the change and finalize the interim boundary or management allocations in the Crescent Creek Wild and Scenic River Management Plan EA. The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015).
219.8(a)(1)(ii) Contributions of the plan area to ecological conditions within the broader landscape influenced by the plan area.	Contributing to ecological conditions in the broader landscape does not directly apply to the need to change and finalize the interim boundary or management allocations in the Crescent Creek Wild and Scenic River Management Plan EA. The Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. Conditions influenced by this plan are limited to the proposed Wild and Scenic River boundary except where free-flow outside of the boundary may affect conditions within the boundary.
219.8(a)(1)(iii) Conditions in the broader landscape that may influence the sustainability of resources and ecosystems within the plan area.	Sustainability of resources and ecosystems within the broader landscape does not directly apply to the need to change and finalize the interim boundary or management allocations in the Crescent Creek Wild and Scenic River Management Plan EA. The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015).

Substantive requirement under 36 Code of Federal Regulations (CFR) 219.8 – 219.11	Applicability or inapplicability of the substantive requirement to the programmatic amendment proposed in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment
219.8(a)(1)(iv) System drivers, including dominant ecological processes, disturbance regimes, and stressors, such as natural succession, wildland fire, invasive species, and climate change; and the ability of terrestrial and aquatic ecosystems on the plan area to adapt to change.	Consideration of these system drivers does not directly apply to the need to change and finalize the boundary or management allocations in the Crescent Creek Wild and Scenic River Management Plan EA. The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015).
219.8(a)(1)(v) Wildland fire and opportunities to restore fire adapted ecosystems.	Consideration of wildland fire does not directly apply to the need to change and finalize the boundary or management allocations in the Crescent Creek Wild and Scenic River Management Plan EA. However the adoption of the proposed Crescent Wild and Scenic River Management Plan and Land Management Allocations does not prevent opportunities to restore fire adapted ecosystems.
219.8(a)(1)(vi) Opportunities for landscape scale restoration.	Consideration of these system drivers does not directly apply to the need to change and finalize the boundary or management allocations in the Crescent Creek Wild and Scenic River Management Plan EA. The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015).
219.8(a)(2) Air, soil, and water.	Consideration for soil and water is directly integrated into the development of the need to change the interim boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA but does not substantially change existing Forest Plan protections found in Management Area 17. Additional standards and guides relating to water quality are included in the Comprehensive River Management Plan (CRMP).
219.8(a)(3) Riparian areas.	Riparian areas do not directly apply to the need to change and finalize the boundary or management allocations in the Crescent Creek Wild and Scenic River Management Plan EA. Riparian reserves will benefit from the management allocation changes within the Wild and Scenic River corridor and the CRMP will continue to provide the same protection to riparian areas.

Substantive requirement under 36 Code of Federal Regulations (CFR) 219.8 – 219.11	Applicability or inapplicability of the substantive requirement to the programmatic amendment proposed in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment
219.8(a)(4) Best management practices for water quality.	The need to change the interim and finalize the boundary or management allocations in the Crescent Creek Wild and Scenic River Management Plan EA do not directly apply to best management practices. National best management practices for water quality are provided by the 2012 National Best Management Practices for Water Quality Management on National Forest System Lands. Proposed adoption of the Comprehensive River Management Plan (CRMP) and boundary changes does not permit any on the ground activities. Site-specific Best Management Practices will be integrated in future projects.
219.8(b) Social and economic sustainability.	The need to change and finalize the boundary or management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply to social and economic stability. The Deschutes Forest Plan provides for social and economic sustainability in the allocation of management areas.
219.9 Diversity of plant and animal communities.	
219.9(a) Ecosystem plan components.	
219.9(a)(1) Ecosystem integrity.	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does apply to Ecosystem Integrity. The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the outstanding remarkable river values (ORV) for which Crescent Creek was included in the Wild and Scenic Rivers System. Geology and Scenic Views are the Outstandingly Remarkable Values (ORVs) which were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015). These are in addition to ensuring free-flow condition and high water quality from the Wild and Scenic River Act of 1988.
219.9(a)(2) Ecosystem diversity.	Ecosystem diversity does not directly apply to the need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA. The Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015).

Substantive requirement under 36 Code of Federal Regulations (CFR) 219.8 – 219.11	Applicability or inapplicability of the substantive requirement to the programmatic amendment proposed in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment
219.9(a)(2)(ii) Rare aquatic and terrestrial plant and animal communities.	The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015).
219.9(a)(2)(iii) The diversity of native tree species similar to that existing in the plan area.	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply. It may benefit the native tree species by leaving the Old Growth/ Administratively Withdrawn areas intact. The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015).
<i>219.9(b) Additional, species- specific plan components.</i>	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply to social and economic stability. The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015).
<i>219.9(c) Species of conservation concern.</i>	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply to social and economic stability. The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015). Species of conservation concern would be looked at on a case-by-case basis for any future projects.
219.10 Multiple Use.	

Substantive requirement under 36 Code of Federal Regulations (CFR) 219.8 – 219.11	Applicability or inapplicability of the substantive requirement to the programmatic amendment proposed in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment
<p><i>219.10(a)(1) Aesthetic values, air quality, cultural and heritage resources, ecosystem services, fish and wildlife species, forage, geologic features, grazing and rangelands, habitat and habitat connectivity, recreation settings and opportunities, riparian areas, scenery, soil, surface and subsurface water quality, timber, trails, vegetation, viewsheds, wilderness, and other relevant resources and uses.</i></p>	<p>This substantive requirement directly applies to the need to create a Comprehensive River Management Plan (CRMP). The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015).</p>
<p><i>219.10(a)(2) Renewable and nonrenewable energy and mineral resources.</i></p>	<p>A new standard and guide was created with the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) relating to mineral resources states: The location of claims under current mining laws will be continued (no locatable mineral are known to be present within the corridor); mineral leasing and the disposal of saleable minerals will only be allowed if such activities would protect and enhance Outstanding Remarkable Values or free-flow/ water quality benefits. The location of claims under current mining laws will be continued (no locatable mineral are known to be present within the corridor); mineral leasing and the disposal of saleable minerals will only be allowed if such activities would protect and enhance Outstanding Remarkable Values or free-flow/ water quality benefits.</p>
<p><i>219.10(a)(3) Appropriate placement and sustainable management of infrastructure, such as recreational facilities and transportation and utility corridors.</i></p>	<p>The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply. Any future project in the Wild and Scenic River corridor will look at two standards and guides relating to the recreation state: 1) Trails will be designed to avoid sensitive riparian areas and to the extent possible provide access to the creek at designated locations. 2) Dispersed camping sites will be regulated to the quantity and location to protect river resources, particularly riparian vegetation and water quality.</p>
<p><i>219.10(a)(4) Opportunities to coordinate with neighboring landowners to link open spaces and take into account joint management objectives where feasible and appropriate.</i></p>	<p>The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply. The changes are only for National Forest lands however, outreach with neighboring private landowners about what it means to live adjacent to a Wild and Scenic River was conducted prior to the start of the NEPA process and during the process to maintain transparency and openness of the project. In addition where possible the boundary was adjusted to remove as much private lands within the Wild and Scenic corridor as possible</p>

Substantive requirement under 36 Code of Federal Regulations (CFR) 219.8 – 219.11	Applicability or inapplicability of the substantive requirement to the programmatic amendment proposed in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment
<i>219.10(a)(5) Habitat conditions, subject to the requirements of 219.9, for wildlife, fish, and plants commonly enjoyed and used by the public; for hunting, fishing, trapping, gathering, observing, subsistence, and other activities (in collaboration with federally recognized Tribes, Alaska Native Corporations, other Federal agencies, and State and local governments).</i>	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply. The Standards and Guides specific to Outstanding and Remarkable Values and free-flow/ water quality are included in the plan and are expected to enhance habitat conditions for potential future projects. Adopting the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) and proposed boundary/ land management allocations does not include any on the ground activities. Future project will include habitat conditions and protections.
<i>219.10(a)(6) Land status and ownership, use, and access patterns relevant to the plan area.</i>	Does not directly apply to the need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA. The CRMP or the EA does not address the land status, ownership or access patterns in the project area because no on the ground activities are proposed. However two standards and guides have the potential to affect future access patterns those include: 1) Trails will be designed to avoid sensitive riparian areas and to the extent possible provide access to the creek at designated locations. 2) Dispersed camping sites will be regulated to the quantity and location to protect river resources, particularly riparian vegetation and water quality.
<i>219.10(a)(7) Reasonably foreseeable risks to ecological, social, and economic sustainability.</i>	Does not directly apply to the need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA as it does not directly apply is not in any way related to social or economic sustainability. Ecological foreseeable risks are addressed in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP).
<i>219.10(a)(8) System drivers, including dominant ecological processes, disturbance regimes, and stressors, such as natural succession, wildland fire, invasive species, and climate change; and the ability of the terrestrial and aquatic ecosystems on the plan area to adapt to change (219.8).</i>	Consideration of these system drivers does not directly apply to the need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA. The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015).
<i>219.10(a)(9) Public water supplies and associated water quality.</i>	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply as the amendment is not associated in any way with public water supplies and associated water quality.

Substantive requirement under 36 Code of Federal Regulations (CFR) 219.8 – 219.11	Applicability or inapplicability of the substantive requirement to the programmatic amendment proposed in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment
<i>219.10(a)(10) Opportunities to connect people with nature.</i>	Does not directly apply as no on-the-ground activities are proposed. Proposed management plan does not prevent opportunities to connect people with nature.
<i>219.10(b) Requirements for plan components for a new plan or plan revision. (i)) Sustainable recreation; including recreation settings, opportunities, and access; and scenic character. Recreation opportunities may include non-motorized, motorized, developed, and dispersed recreation on land, water, and in the air.</i>	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply. For protection of Crescent Creek a designated wild and scenic river. To protect the values that provide the basis for their suitability for inclusion in the system.
<i>(ii) Protection of cultural and historic resources.</i>	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply as there are no ground disturbing activities authorized by this EA. Cultural and historic resources are always considered on every project and protected under the National Historic Preservation Act (Section 106).
<i>(iii) Management of areas of tribal importance.</i>	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply as there are no ground disturbing activities authorized by this EA. Area of Tribal importance are always considered on every project and protected under the National Historic Preservation Act (Section 106).
<i>(iv)) Protection of congressionally designated wilderness areas as well as management of areas recommended for wilderness designation to protect and maintain the ecological and social characteristics that provide the basis for their suitability for wilderness designation.</i>	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply. Congressionally designated wilderness has a higher set of restrictions than Wild and Scenic Rivers. The boundary was adjusted to ensure that no wilderness was included in the Crescent Creek Wild and Scenic River Corridor.
<i>(v) Protection of designated wild and scenic rivers as well as management of rivers found eligible or determined suitable for the National Wild and Scenic River system to protect the values that provide the basis for their suitability for inclusion in the system.</i>	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA directly applies for protection of Crescent Creek a designated wild and scenic “recreational” river. The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) of geology and scenic views were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015).
<i>(vi) Appropriate management of other designated areas or recommended designated areas in the plan area, including research natural areas.</i>	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply. The Old Growth /Administratively Withdrawn portion that is included in the Wild and Scenic River Corridor will remain the same.
219.11 Timber requirements based on the NFMA.	

Substantive requirement under 36 Code of Federal Regulations (CFR) 219.8 – 219.11	Applicability or inapplicability of the substantive requirement to the programmatic amendment proposed in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment
<p>219.11(a)(1) <i>The responsible official shall identify lands within the plan area as not suited for timber production if any one of the following factors applies:</i></p> <p>(i) <i>Statute, Executive order, or regulation prohibits timber production on the land;</i></p> <p>(ii) <i>The Secretary of Agriculture or the Chief has withdrawn the land from timber production;</i></p> <p>(iii) <i>Timber production would not be compatible with the achievement of desired conditions and objectives established by the plan for those lands;</i></p> <p>(iv) <i>The technology is not currently available for conducting timber harvest without causing irreversible damage to soil, slope, or other watershed conditions;</i></p> <p>(v) <i>There is no reasonable assurance that such lands can be adequately restocked within 5 years after final regeneration harvest; or</i></p> <p>(vi) <i>The land is not forest land.</i></p>	<p>The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply. Scheduled timber harvest is not a plan component under the Wild and Scenic River M17 Standards and guidelines. Vegetation Management would be allowed (see M17-5). The Forest Plan Amendment converts 483 acres of Matrix (363 areas of General Forest) to Wild and Scenic River Land Management Allocation however most of that acreage is already considered Riparian Reserve (RR) which is not considered suitable for timber production.</p>
<p>219.11(a)(2) <i>The responsible official shall review lands identified in the plan as not suited for timber production at least once every 10 years, or as otherwise prescribed by law, to determine whether conditions have changed so that they have become suitable for timber production. As a result of this 10-year review, the plan may be amended to identify any such lands as suitable for timber production, if warranted by changed conditions.</i></p>	<p>The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply. Scheduled timber harvest is not a plan component under the Wild and Scenic River M17 Standards and guidelines. Vegetation Management would be allowed (see M17-5). The Forest Plan Amendment converts 483 acres of Matrix (363 areas of General Forest) to Wild and Scenic River Land Management Allocation however most of that acreage is already considered Riparian Reserve (RR) which is not considered suitable for timber production.</p>
<p>219.11 (b) <i>Timber harvest for purposes of timber production. A plan that identifies lands as suitable for timber production must include plan components, including standards or guidelines, to guide timber harvest for timber production or for other multiple use purposes on such lands.</i></p>	<p>No proposed timber harvest or on-the-ground activity are proposed by the adoption of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) or proposed boundary/ land management allocations.</p>
<p>219.11(c) <i>Timber harvest for purposes other than timber production. Except as provided in paragraph (d) of this section, the plan may include plan components to allow for timber harvest for purposes other than timber production throughout the plan area, or portions of the plan area, as a tool to assist in achieving or maintaining one or more applicable desired conditions or objectives of the plan in order to protect other multiple-use values, and for salvage, sanitation, or public health or safety. Examples of using timber harvest to protect other multiple use values may include improving wildlife or fish habitat, thinning to reduce fire risk, or restoring meadow or savanna ecosystems where trees have invaded.</i></p>	<p>The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply. Scheduled timber harvest is not a plan component under the Wild and Scenic River M17 Standards and guidelines. Vegetation Management would be allowed (see M17-5). No on the ground activities are proposed.</p>
<p>219.11(d) <i>Limitations on timber harvest. Whether timber harvest would be for the purposes of timber production or other purposes, plan components, including standards or guidelines, must ensure the following:</i></p> <p>(1) <i>No timber harvest for the purposes of timber production may occur on lands not suited for timber production.</i></p>	<p>The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply. Scheduled timber harvest is not a plan component under the Wild and Scenic River M17 Standards and guidelines. Vegetation Management would be allowed (see M17-5). No on the ground activities are proposed.</p>

Substantive requirement under 36 Code of Federal Regulations (CFR) 219.8 – 219.11	Applicability or inapplicability of the substantive requirement to the programmatic amendment proposed in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment
<i>219.11(d) Limitations on timber harvest. Whether timber harvest would be for the purposes of timber production or other purposes, plan components, including standards or guidelines, must ensure the following: (2) Timber harvest would occur only where soil, slope, or other watershed conditions would not be irreversibly damaged;</i>	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply. Scheduled timber harvest is not a plan component under the Wild and Scenic River M17 Standards and guidelines. Vegetation Management would be allowed (see M17-5). No on the ground activities are proposed.
<i>219.11(d) Limitations on timber harvest. Whether timber harvest would be for the purposes of timber production or other purposes, plan components, including standards or guidelines, must ensure the following: (3) Timber harvest would be carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and aesthetic resources.</i>	The need to change and finalize the boundary and management allocations in the Crescent Creek Wild and Scenic River Management Plan EA does not directly apply. Scheduled timber harvest is not a plan component under the Wild and Scenic River M17 Standards and guidelines. Vegetation Management would be allowed (see M17-5). No on the ground activities are proposed.
<i>219.11(d) Limitations on timber harvest. Whether timber harvest would be for the purposes of timber production or other purposes, plan components, including standards or guidelines, must ensure the following: (4) Where plan components will allow clearcutting, seed tree cutting, shelterwood cutting, or other cuts designed to regenerate an even-aged stand of timber, the plan must include standards limiting the maximum size for openings that may be cut in one harvest operation, according to geographic areas, forest types, or other suitable classifications. Except as provided in paragraphs (d)(4)(i) through (iii) of this section, this limit may not exceed 60 acres for the Douglas-fir forest type of California, Oregon, and Washington; 80 acres for the southern yellow pine types of Alabama, Arkansas, Georgia, Florida, Louisiana, Mississippi, North Carolina, South Carolina, Oklahoma, and Texas; 100 acres for the hemlock-Sitka spruce forest type of coastal Alaska; and 40 acres for all other forest types.</i>	No proposed timber harvest or on-the-ground activity are proposed by the adoption of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) or proposed boundary changes and land management allocations changes.
<i>219.11(d) Limitations on timber harvest. Whether timber harvest would be for the purposes of timber production or other purposes, plan components, including standards or guidelines, must ensure the following: (5) Timber will be harvested from NFS lands only where such harvest would comply with the resource protections set out in sections 6(g)(3)(E) and (F) of the NFMA (16 U.S.C. 1604(g)(3)(E) and (F)). Some of these requirements are listed in paragraphs (d)(2) to (d)(4) of this section.</i>	No proposed timber harvest or on-the-ground activity are proposed by the adoption of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) or proposed boundary changes and land management allocations changes.

Substantive requirement under 36 Code of Federal Regulations (CFR) 219.8 – 219.11	Applicability or inapplicability of the substantive requirement to the programmatic amendment proposed in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment
<p><i>219.11(d) Limitations on timber harvest. Whether timber harvest would be for the purposes of timber production or other purposes, plan components, including standards or guidelines, must ensure the following: (6) The quantity of timber that may be sold from the national forest is limited to an amount equal to or less than that which can be removed from such forest annually in perpetuity on a sustained yield basis. This limit may be measured on a decadal basis.</i></p> <p><i>(i) The plan may provide for departures from this limit as provided by the NFMA when departure would be consistent with the plan's desired conditions and objectives. Exceptions for departure from this limit on the quantity sold may be made only after a public review and comment period of at least 90 days.</i></p> <p><i>(ii) This limit may be based upon increases in harvest levels based on intensified management practices, such as reforestation, thinning, and tree improvement if such practices justify increasing the harvests in accordance with the Multiple-Use Sustained-Yield Act of 1960. The plan must require that such harvest levels be decreased at the end of each planning period if such practices cannot be successfully implemented or funds are not received to permit such practices to continue substantially as planned.</i></p> <p><i>(iii) The Chief must include in the Forest Service Directive System procedures for estimating the quantity of timber that can be removed annually in perpetuity on a sustained-yield basis, and exceptions, consistent with 16 U.S.C. 1611.</i></p>	<p>Timber harvest associated with the Forest Plan amendments would not affect sustained yield on the Forest. Therefore this substantive requirement is not applicable.</p>
<p><i>219.11(d) Limitations on timber harvest. Whether timber harvest would be for the purposes of timber production or other purposes, plan components, including standards or guidelines, must ensure the following: (7) The regeneration harvest of even-aged stands of trees is limited to stands that generally have reached the culmination of mean annual increment of growth. This requirement would apply only to regeneration harvest of even-aged stands on lands identified as suitable for timber production and where timber production is the primary purpose for the harvest. Plan components may allow for exceptions, set out in 16 U.S.C. 1604(m), only if such harvest is consistent with the other plan components of the land management plan.</i></p>	<p>The regeneration harvest that is associated with the proposed Forest Plan amendments is not for the purpose of timber production. Therefore this substantive requirement is not applicable.</p>

Preparers _____

Name	Resource and Position
Lil Cross	NEPA, Crescent Ranger District, NEPA Writer/Editor
Kathy Enna	Fuels, Assistant Fire Management Officer Fuels
Sarah Hash	Soils, Zoned Crescent and Bend-Fort Rock Ranger District
Michelle King	Recreation, NEPA, Crescent Ranger District Environmental Coordinator
Joan Kittrell	Wildlife, Crescent Ranger District, Wildlife Biologist
Joe Monroe	GIS, Data Resource Management, Customer Service Area 3 (retired May 2018)
Paul Powers	Fisheries, Crescent Ranger District, Fish Biologist
Emily Pritchard	Cultural Resources, Crescent Ranger District, Archaeologist
Starr Sullivan	Transportation, Crescent Ranger District, Road Manager/ Transportation Planner
Christina Veverka	Botany, Crescent District Botanist
Bart Wills	Geologist, Deschutes National Forest
Kyle Wright	IDT Lead, Hydrology, Zoned Crescent and Bend-Fort Rock Ranger District, Hydrologist

APPENDICIES

Appendix A: Crescent Creek Wild and Scenic River Comprehensive River Management Plan

This Draft Comprehensive River Management Plan for Crescent Creek is a stand-alone document. It is included as an appendix in the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment for transparency and ease of public access.

Crescent Creek Wild and Scenic River Comprehensive River Management Plan



Deschutes National Forest 2018

Introduction

Crescent Creek originates within the Deschutes National Forest on the eastern slopes of the Cascades and flows downstream approximately 33 miles to its confluence with the Little Deschutes River. The designated Wild and Scenic area includes 10 miles, beginning at the outlet of Crescent Lake and ending at the Forest Service boundary at the Crescent Cut-off Road. Legal description of this project from SW 1/4 of Section 11, T24S, R6E to the west section line of Section 13, T24S, R7E. Six of the ten miles of Crescent Creek designated as Wild and Scenic River corridor is managed by the U.S. Forest Service with the balance in private ownership.

This entire designated portion of Crescent Creek is free-flowing. Below Crescent Lake dam there are no water diversions, dams, or other impoundments on this reach of stream on National Forest land. The shorelines are natural except in the immediate vicinity of the two road crossings and the portions of the creek on private lands. The bridges are above the ordinary high water mark and do not disrupt the river's free-flowing character. The river corridor is landscape dominated and defined by natural forces. With its natural components intact and dominant, it provides a high level of scenic attractiveness.

The Purpose of This Plan

The goal of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan (CRMP) is to protect and enhance the river values for which Crescent Creek was included in the Wild and Scenic Rivers System. In addition to free-flow and high water quality, Outstandingly Remarkable Values (ORVs) were determined in a Resource Assessment in 1990 and then verified in a second Resource Assessment in 2015 (USFS 2015). The ORVs unique to this designated portion of river were identified as: Geology and Scenic Vegetation. The following sections briefly discuss existing conditions to provide context, prior to summarizing applicable management direction and defining the desired future condition of the river corridor. Examples of consistent and inconsistent uses are included to provide further clarification on how to interpret standards and guidelines. Actions that lead toward the desired conditions over the long-term are consistent with this plan. Actions that lead the corridor away from desired conditions over the long-term are not consistent with this plan. A monitoring plan with measures, indicators, and action trigger points is also outlined.

This plan will be implemented through three primary mechanisms, including intergovernmental coordination, individual agency action, and partnerships with non-governmental organizations and the public. Ultimately its success will depend on community involvement and stewardship. The Deschutes National Forest Land and Resource Management Plan (LRMP; USFS 1990) was amended to support this Comprehensive River Management Plan. Future actions or projects would require appropriate National Environmental Policy Act (NEPA) analysis, documentation, and public involvement for projects on Federal lands. Private landowners are not affected by this plan but are required under the Wild and Scenic River Act that for any project they have that occurs within the ordinary high water mark of Crescent Creek to follow county, state, and Federal regulations.

Background

In 1968, Congress passed the Wild and Scenic Rivers Act (P.L. 90-542) and established a nationwide system of outstanding free-flowing rivers. For a river segment to be considered eligible for Wild and Scenic River status it must be "free-flowing" and possess "outstandingly remarkable values" within its immediate environment. These rivers are protected for the benefit and enjoyment of present and future generations. In 1968, Congress identified 27 rivers for study with the enabling legislation. To date, 208 rivers in 40 states and the Commonwealth of Puerto Rico have been added to the National Wild and Scenic Rivers System.

Timeline of the Crescent Creek Wild and Scenic River Designation:

1988 – The 10 mile segment of Crescent Creek was designated by Congress as a Wild and Scenic River (Recreational) as part of the Omnibus Oregon Wild and Scenic Rivers Act of 1988.

1990 - A Resource Assessment was conducted in 1990 to identify outstandingly remarkable values exclusive to the designated Wild and Scenic component of Crescent Creek.

2009 - Environmental Assessment was started.

2015 – A second Resource Assessment was conducted in 2015 to identify outstandingly remarkable values exclusive to the designated Wild and Scenic component of Crescent Creek. The Resource Assessment confirmed geology and scenic vegetation to be outstandingly remarkable values (ORVs) for Crescent Creek.

2018 – The Environmental Assessment amended the Forest Plan to provide specific Forest Plan guidance to Crescent Creek as well as to identify a final River Corridor boundary as required by the Wild and Scenic Rivers Act. This Comprehensive River Management Plan is an outcome supported by this environmental assessment.

The selected alternative in the Environmental Assessment:

- Describes the desired future conditions within the river corridor;
- Established a final river corridor boundary;
- Established Forest Plan standards and guidelines specific to Crescent Creek Wild and Scenic River corridor;
- Made an initial determination of recreational use capacity; and
- Developed a monitoring plan related to management and recreational use within the corridor.

River Corridor Boundary

The 1988 designation of the Crescent Creek Wild and Scenic River established an interim river corridor boundary with a width of 0.25 miles from the ordinary high water mark on either side of the river for interim management during the preparation of the final boundary and comprehensive river management plan. The final corridor boundary was determined as part of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan Environmental Assessment. The adjustments to the Crescent Creek Wild and Scenic River boundary were intended to provide for protection and enhancement of river values. Section 3(b) of the Wild and Scenic River Act states “...establish detailed boundaries therefor (which boundaries shall include an average of not more than 320 acres of land per mile measured from the ordinary high water mark on both sides of the river).” This plan does not apply to any portions of Crescent Creek downstream, outside of federal lands, thus outside of the designated Wild and Scenic River Corridor.

Proposed Boundary Maps

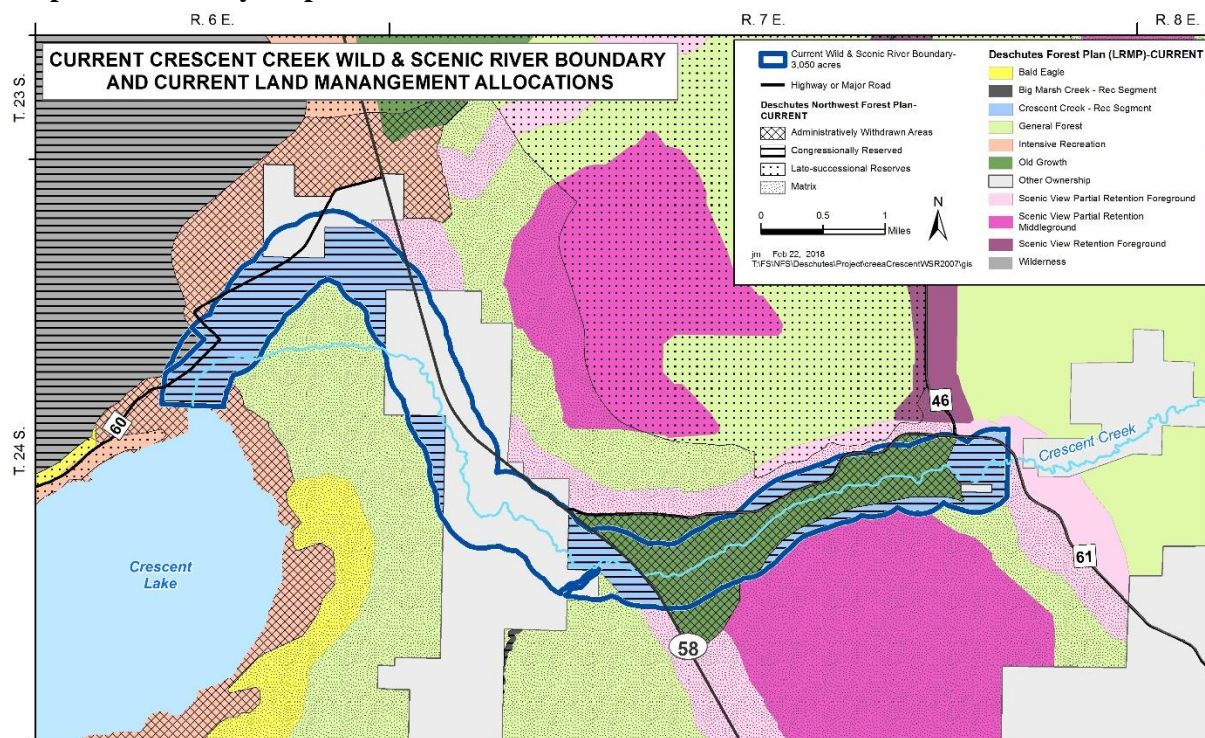


Figure 4: Current Boundary and Land Management Allocations

Modifications: Current

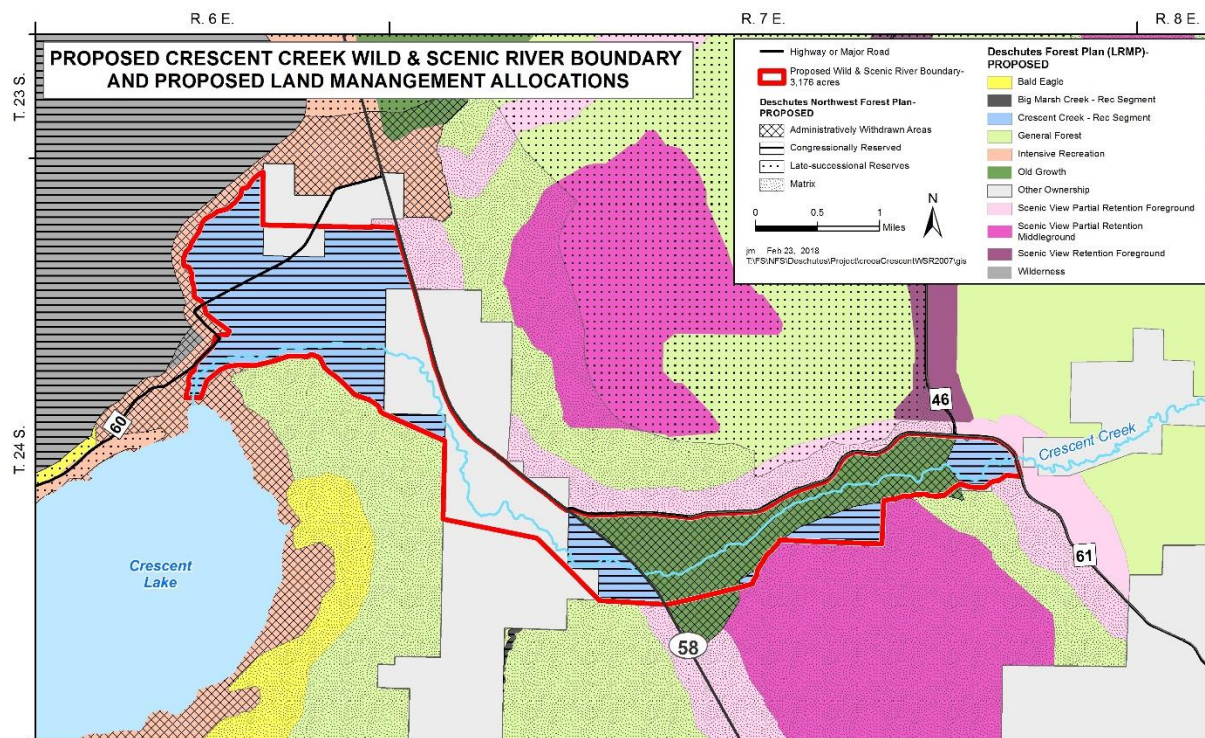


Figure 5: Proposed Boundary and Land Management Allocations

Boundary Modifications: Proposed

River Classification

This designated 10 mile segment of Crescent Creek is classified as “Recreational”. Recreational rivers are defined in the Wild and Scenic Rivers act as: *“Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.”*

Table 13: Deschutes Land Management Allocations

Deschutes Land Management Allocations	Current WSR Boundary	Existing Allocation with New WSR Boundary	Proposed WSR Boundary
Wild and Scenic	1,277	910	1,605
Old Growth	752	849	851
Other Ownership	984	721	721
General Forest	13	363	0
Wilderness	23	0	0
Intensive Recreation	0	238	0
Scenic View Partial Retention Foreground	0	25	0
Scenic View Partial Retention Middleground	0	71	0
Total Acres:	3,050	3,176	3,176

Note: Wilderness land allocation is not changed this is a result of wilderness no longer with the boundary. Old Growth is also not changed it is the result of a change on the boundary, where Old Growth exists within the boundary it is also overlapped with wild and scenic.

Table 14: Northwest Forest Land Management Allocations

Northwest Forest Land Management Allocations	Current WSR Boundary	Existing Allocation with New WSR Boundary	Proposed WSR Boundary
Congressionally Reserved	1,286	910	1,605
Administratively Withdrawn	752	1,086	851
Other Ownership	984	721	721
Matrix	13	458	0
Total Acres:	3,050	3,176	3,176

Management Direction

Management direction on the Deschutes National Forest comes from the *Deschutes National Forest Land and Resource Management Plan* (Forest Plan 1990), as amended by the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl* (Northwest Forest Plan 1994). These two documents guide planning on the forest through the categorization of land allocations (known as Management Areas) across the Forest, and each management area contains prescribed standards and guidelines that must be adhered to. This Management Plan, including standards and guidelines, specific to Crescent Creek was developed as a part of the Crescent Creek Wild and Scenic River Comprehensive River Management Plan EA. This Management Area was applied to areas within the final Crescent Creek Wild and Scenic River Boundary to ensure that Wild and Scenic River values were protected.

The Management Area includes many standards and guidelines specific to certain resource areas. It also includes two overarching standards and guidelines for all activities.

- All activities within the corridor will preserve the river’s free flow, water quality, and Outstandingly Remarkable Values.

- In instances where there is conflicting or overlapping direction, apply the most restrictive direction.

These guidelines help ensure that river values are protected in any unanticipated future activities.

Desired Future Condition

River management will support a condition where landscapes within and near the channel of Crescent Creek possess a concentration of complex, diverse, and highly scenic vegetation and geological features. Natural processes, including disturbance, continue across the watershed, occurring at natural rates and scales. The landscape scenery is dominated by a natural character and retains the high level of scenic attractiveness and integrity that led to its Wild and Scenic River designation.

Consistent and Inconsistent Uses

The desired future condition presents a broad vision of the desired state for resources in the river corridor, and standards and guidelines provide more detailed management direction. Uses that are consistent and inconsistent with the standards and guidelines are discussed for each Outstandingly Remarkable Value (ORV), as well as other resource areas. Actions that lead toward the desired conditions over the long-term would be considered consistent with this plan. Actions that lead the corridor away from desired conditions over the long-term would be considered inconsistent with this plan. While it may not be possible to anticipate every potential future use, discussion of consistent and inconsistent uses is intended to provide additional clarification on how to interpret standards and guidelines if conflicts arise.

Outstandingly Remarkable Values

The Wild and Scenic Rivers Act, requires the protection and enhancement of river values. i.e., the values that caused it to be included in the National Wild and Scenic Rivers System. The Wild and Scenic Rivers Act states that to be considered for designation, a river or portion of river must be free-flowing and possess at least one “outstandingly remarkable value.” The 2015 Resource Assessment confirmed *scenery* and *geology* to be outstandingly remarkable values for Crescent Creek.

The following criteria were used to determine ORVs for Crescent Creek:

Values are river-related. To be considered river-related, values should:

1. Be located in the river or its immediate environment,
2. Contribute substantially to the functioning of the river ecosystem, and/or
3. Owe their existence to the presence of water.

Outstandingly Remarkable Values (ORVs) were defined as unique or exemplary features that are significant at a comparative regional or national scale. A resource or combination of resources that are either one-of-a-kind, or one of the better examples of that type of resource.

The Deschutes National Forest assembled an Interdisciplinary Team (IDT) to evaluate the potential outstanding remarkable values of Crescent Creek. The IDT considered unique values and the degree of rareness at a regional or national level. Values must be river-related in that they owe their existence or contribute to the functioning of the river system and its immediate environs. The IDT used standardized criteria against which river values are compared for determining outstandingly remarkable values. The IDT felt it was necessary to compare Crescent Creek with other rivers which displayed the same evolutionary processes, environmental features and climates as Crescent Creek. It was decided that Crescent Creek would be compared with rivers located in the region to the north which includes the Deschutes River of which Crescent Creek is a tributary. Values which were not determined to be ORVs

are considered in this document according to the ways they contribute to the protection and enhancement of river values. Some of these values may also have additional non-river related management considerations. Such considerations are generally covered in other planning and management documents and are outside of the scope of this Comprehensive River Management Plan.

A summary of each ORV follows

Geology

The geologic values of Crescent Creek are considered outstanding remarkable because the geologic condition of the area is dramatic and of considerable educational value. Crescent Creek exemplifies a geomorphological area to enjoy and study the ancient glacial processes and landforms. For this reason, Crescent Creek represents outstanding remarkable values for the region, worth preserving because of its outstanding geologic values for the enjoyment and scientific study of the considerable variety of glacial and erosional processes and landforms for present and future generations.

Existing surface geology within the proposed Wild and Scenic River boundary

- 76-77% Quaternary gravels – glacial deposits from Suttle Lake advance (glacial maximum 20,000 years ago) mapped to head of canyon.
- 13% Two Quaternary Tertiary older mafic vent complexes (Royce Mountain to the north and Odell Butte to the south) that form the canyon that Crescent Creek flows through.
- 10% Quaternary fluvial mixed grain sediments downstream from the mouth of the canyon.
- <1% Quaternary cinder cone on far eastern boundary limit.

Groundwater Dependent Ecosystems (GDE)

Two (2) springs are located in Township 24 South, Range 6 East, Sections 2 and 11 along the west boundary of the proposed draft Wild and Scenic River boundary and downslope of the railroad grade.

Cave Resources

No known caves within the proposed draft Wild and Scenic River boundary. If any caves are discovered, the Forest Service would refer to the Federal Cave Protection Act of 1988.

Geo-Hazards:

Volcanic Hazard

The probability of a volcanic hazard in the vicinity of Crescent Creek is low. The entirety of Crescent Creek free-flows through the High Cascade Mountain geologic province which is principally composed of quaternary volcanic vents and lava flows. The volcanism in the Cascades is driven by an active subduction zone off the coast of Oregon making central Oregon constantly prone to new volcanic events. The area of and immediately adjacent to the 10-mile Wild and Scenic boundary has not experienced any recent volcanism (within last 10,000 years). Thirty three miles northeast of the eastern Crescent Creek Wild and Scenic boundary, Oregon's youngest lava flow (Big Obsidian Flow) erupted 1,300 years ago. Thirty six miles south-southwest of southern Crescent Creek Wild and Scenic boundary, Mount Mazama erupted 7,700 years ago forming Crater Lake, Oregon's only National Park.

Earthquake Hazard

In October 2015, six miles northeast of the eastern Crescent Creek Wild and Scenic boundary a swarm of 43 earthquakes was recorded by Pacific Northwest Seismic Network's seismographs.

Rockfall Hazard

High slope angles (27 to 45 degrees) and exposed large rock outcrops lead to increased probability of natural rockfall in the steep canyon between Royce Mountain and Odell Butte.

Mineral Material Minerals

There are no active or closed mineral material sources (rock pits and quarries) within the proposed draft Wild and Scenic River boundary.

Locatable Minerals

Scenic and recreation portions of the Wild and Scenic River Act are not withdrawn from locatable mining. On March 20, 2017, using the DOI BLM online database LR2000, a Mining Claim Geographic Index report search for all active, closed, pending, and void mining claims was performed. The LR2000 report for T24S, R6E and T24S, R7E did not reveal any active, closed, pending, or void mining claims within the proposed draft Wild and Scenic River boundary. Based on this search there are no valid existing rights within the proposed Wild and Scenic River boundary.

How the Geology ORV contributes to Desired Future Conditions

Land forming processes will continue at a natural pace. Landscapes within Crescent Creek possess a concentration of complex, diverse, and highly scenic geologic features created by glacial and volcanic events. The diverse and varied geological features of this area are protected, and provide opportunities for learning about the unique volcanic and glacial forces that formed this mountain landscape.

Consistent and Inconsistent Uses

- Subject to regulations (36 CFR 228), new mining claims are allowed. Mineral activity must be conducted in a manner that minimizes surface disturbance, sedimentation, pollution, and visual impairment [LRMP, M17-5 Standards (Mining)] would be consistent.
- Mineral material sources (rock pits and quarries) within the proposed Wild and Scenic River boundary shall be withdrawn from entry, sale, and other disposition under public land laws would be consistent.
- Installation of scientific monitoring equipment with negligible impacts would be consistent.

Standards and Guidelines

G-1: The location of claims under current mining laws will be continued (no locatable mineral are known to be present within the corridor); mineral leasing and the disposal of saleable minerals will only be allowed if such activities would protect and enhance Outstanding Remarkable Values or free-flow/ water quality benefits.

Scenic Vegetation

The scenic vegetation resource of Crescent Creek is considered to be outstandingly remarkable. Scenic and vegetative diversity is unique within the steepness and narrowness of the canyon. A variety of conifers, Engelmann spruce, lodgepole pine, ponderosa pine and some true firs, are visible from the stream. Large old growth ponderosa pines in excess of 24 inches in diameter (dbh) exhibiting the characteristic yellow-bellied appearance are found scattered throughout. Several large rock outcrops found in the lower sections of the zone add variety to the overall visual landscape. As the creek exits the canyon, the valley floor widens and there is an increase in willows and rose species, which have grown to large sizes. The lack of seen human intrusion creates a feeling of pristine wilderness, close to a major county highway.



Figure 6. Crescent Creek free-flowing through the Canyon

How the Scenic Vegetation ORV contributes to Desired Future Conditions

The landscape scenery is dominated by a natural character and retains the high level of scenic attractiveness that led to its Wild and Scenic River designation. Immediate foreground and foreground scenic views for primary travel corridors exhibit a vegetative diversity of species, age, and size class that add a sense of mystery to the landscape. Foreground views are punctuated by occasional middle and background views of the surrounding landscape. Direct views of water may be limited, but its presence on the landscape should be sensed and felt. Middleground and background scenic views from, or into, the Wild and Scenic River corridor are of a naturally appearing landscape dominated by natural form, line, texture and shapes. The diversity of tree species in the corridor and the presence of large outcrops and instream boulders add to the visual attraction of the area and invite exploration.

Consistent and Inconsistent Uses

- Vegetation management activities would be consistent where they maintain or enhance scenic integrity.
- Mitigations to protect scenic integrity would be expected. Commercial or noncommercial vegetation management and utilization activities where allowed by other plans and standards which accomplish desired management (i.e. thinning, managed firewood cutting, biomass removal) would be consistent.
- Restoration of impacted areas with native plant species would be consistent

Standards and Guidelines

SV-1: Partial retention will be used as the visual management standard within Crescent Wild and Scenic River boundary.

Other Resources

Recreation

Water-based recreation opportunities throughout the Wild and Scenic River corridor are very limited. Flow regulation out of Crescent Lake is the greatest concern for water based recreation. Currently the annual hydrograph is essentially reversed with higher flows in the summer months, June through September and much lower when irrigation season is over, which would be opposite of what would be expected in a natural system. There are no established or visible put-ins or take-outs for the river and there is too much woody debris for whitewater rafting to be viable.

Fishing is another activity that occurs along the river. This activity is limited by river access and not found desirable to most fisherman. As a result of the reversed natural flow conditions, the amount of habitat available to native fish during the storage season is greatly reduced. Spawning, incubation, and emergence are likely adversely affected by these conditions. Local managers' experience suggests this type of use is very minimal.

Presently, there are no Forest Service trails along the river but limited use by off-trail hikers, hunters, and mushroom pickers can be seen in the area. Due to the limited developed roads and steep terrain, this area on National Forest land sees very little winter recreation. On the private land, there are a few unauthorized trails that begin on private property but lead to National Forest land.

Crescent Creek campground is the only developed recreation site within the Wild and Scenic River Corridor. Crescent Creek campground is considered a low use campground, (see Capacity analysis), and is a somewhat isolated campground that is popular for bird watching, camping, and to a lesser degree fishing, during hunting season. The campground is operated by a concessionaire from the end of May to the end of September with additional use in the fall for hunting camps. It contains a vault toilet, water (seasonally), picnic tables, and fire rings. The campground has river access and views of the unique geology and vegetation in the canyon. Additionally, there are three known dispersed camping areas west of Crescent Creek campground. These receive light summer camping use, light day-use by fisherman, and moderate-light use during the hunting season.

How Recreation contributes to Desired Future Conditions

There are sustainable recreation opportunities that allow for enjoyment of the Wild and Scenic River, and that are consistent with the preservation of river values. Recreation supports public appreciation of the Wild and Scenic River.

Consistent Uses

- Dispersed camping is allowed. Campsites are rested or decommissioned as needed.
- Fishing, hunting, hiking and other recreational opportunities exist. Motorized access occurs on designated routes in accordance with Travel Management standards.
- Boating which does not require wood manipulation.
- Winter recreation such as cross country skiing or over the snow machine travel.
- Special use permits for groups, individuals, or organizations on the Crescent Ranger District which protect the area's character.
- Low key signing, off site interpretation, and on-site interpretation that is consistent with the area's desired character.

- Unauthorized road closures or obliterations for resource protection or to reduce vandalism.

Inconsistent Uses

- Unauthorized trails or roads that adversely impact riparian areas, cultural sites, wildlife refugia, or cause unstable areas or erosive soils.
- Dispersed camping or campfires that adversely impact Outstandingly Remarkable Resource Values would not be consistent.
- Illegal or undesirable behaviors such as building unauthorized roads or trails, building unauthorized bridges, shooting trees, graffiti, leaving trash, cutting live or dead standing trees outside firewood cutting areas, or vandalism would not be consistent.
- Illegal or undesirable behaviors associated with the railroad corridor such as waste and trash dumping, unauthorized road building, or unauthorized vegetation clearing would not be consistent.

Visitor Capacity

Section 3(d)(1) of the Wild and Scenic Rivers Act directs agencies to address visitor capacities in a comprehensive river management plan. This is to ensure that use levels in the river area do not threaten river values or established desired conditions. Overall visitor use within Crescent Creek area is quite low and does not appear to be threatening river values. Commensurate with this there has not been a large degree of investment in data collection, monitoring, and analysis to support visitor capacity estimates. As a result the visitor capacity estimates included in this comprehensive river management plan recognize the likelihood that visitor capacity decisions may need to be reviewed and revised as more data becomes available. The monitoring plan associated with this Comprehensive River Management Plan, outlines thresholds that if exceeded would determine if a re-examination of visitor capacities or other negative effects to the river values is needed.

Initial Visitor Capacity Estimates

To determine initial visitor capacity estimates, visitors were divided into four categories: Crescent Creek Campground primary season, Crescent Creek Campground hunting season (fall), dispersed camping, and dispersed recreation. Capacity estimates were based off of formulas used in other WSR projects including the Upper White Salmon and professional judgement.

- Crescent Creek Campground, primary season use
 - Formula= (number of sites) x (number of days in season) x (site occupancy rate) x (average campers per site)
 - Crescent Creek Campground sees very light use compared to other developed campgrounds on the District. Standard site occupancy rates in other campgrounds are around (1/3 or 33.3%) in visitor analysis. In this case, we will be utilizing a 1/10 rate for 10%. With field observations, we will utilize an average of 4 campers per site. Standard operating season is 4 months over the summer (May-September).
 - **480 campers** during one primary season= 10 sites x 120 days x 10% occupancy x 4 campers.
- Crescent Creek Campground, hunting season (fall)
 - Although no amenities are provided after the campground is closed, the area is popular for hunting camps. Multiple hunting seasons exist on the Crescent Ranger District but the most popular camping times typically overlap with modern rifle hunts in the month of October. Hunting camper at the campground have been observed to be closer to the

standard 4 people per site, camping in larger numbers than primary season use campers in the area. The standard 1/3 occupancy rate is also applicable in this case.

- **400 campers** during hunting season=10 sites x 30 days x 33.3% occupancy x 4 campers
- Dispersed camping
 - There are three known dispersed campsites within the river corridor. It is likely that there are more, smaller and less developed sites along the river due to the open vegetation and river access that have not been discovered. Dispersed campers occupy the area throughout the spring, summer and fall in small occupancy rates. Through observation, there are usually 2 campers per site.
 - **120 dispersed campers**= 3 sites x 200 days x 10% occupancy x 2 campers
- Dispersed recreation
 - Dispersed recreation within the river corridor includes hiking, hunting, and fishing. There are so few observations of dispersed recreation, there is no appropriate formula to estimate number of individuals. There are no established popular dispersed sites but in areas of open forest, recreationalists can easily move across the landscape. The best observations include counting vehicles throughout the year parked along the ‘Crescent Cutoff’ where recreationalists park and hike downhill to the river. Local residents may be accessing the river but their use is not documented since it appears they obtain access from private land. The majority of dispersed use occurs within the summer months (approximately 120 days). Average group size is estimated at 1-2 people.

Carrying Capacity

The following is an evaluation of the estimated carrying capacity of the river corridor that would maintain core river values and protect the river ORVs. If during monitoring these capacity numbers are approximately met, managers will need to reevaluate the need for additional management actions. This evaluation takes into consideration current facilities, roads and trails. As use patterns or other management activities across the District change, these numbers may need to be reevaluated.

- Crescent Creek Campground, primary season use
 - If the campground was at full capacity for half of the open season, this would likely mean that for several weeks during peak camping season, the campground would be completely or nearly full. If this were the case, campers that could not get into the campground would potentially go to surrounding areas and put additional pressure on natural resources and impact river values. With no other near-by developed recreation facilities, there isn’t infrastructure that could protect the corridor. Popular existing dispersed sites would also likely be full during the busy camping season. Campers may create or expand dispersed sites.
 - **2,400 campers** during one primary season= 10 sites x 120 days x 50% occupancy x 4 campers.
- Crescent Creek Campground, hunting season
 - With increased occupancy during hunting season, there would be periods where all sites were full and campers would seek near-by opportunities. Popular existing dispersed sites could also be full, causing campers to create new or expand dispersed sites. Since hunters are limited to their hunting season and specific tag, it is unlikely that the District would see drastic short-term changes in hunting use of the ranger district.
 - **600 campers** during hunting season=10 sites x 30 days x 50% occupancy x 4 campers.
- Dispersed Camping
 - With increased occupancy, there would be periods that all existing sites would be full and campers would seek new or expand dispersed sites. Without infrastructure, natural resource damage could occur including excess human waste and garbage. Dispersed

camping could be directly related to available developed campground occupancy. If all near-by developed campgrounds are at or near capacity, more campers could choose to disperse camp.

- **600 dispersed campers**= 3 sites x 200 days x 50% occupancy x 2 campers
- Dispersed Recreation
 - A signifier that the carrying capacity has been met for dispersed recreation would be recreation created natural resource damage within the river corridor. This could include users creating new or widening existing parking areas to access the river, the creation of unauthorized user-created roads or trails, and trash or dumping associated with hunting, fishing, or hiking in the area.

Hydrology

Crescent Creek is the outflow from Crescent Lake. It is generally a slow moving stream with an average gradient drop of less than 45 feet per mile. It is regulated by the Tumalo Irrigation District for irrigation purposes. Temperatures are influenced by the regulated flows and average 42 degrees F for the summer months. Low flows are common during the months of October through April when the lake is recharged for summer irrigation withdrawal. High flows are usually moderate (averaging 146 CFS) during the months of June through September. Flows for irrigation purposes may exceed 230 CFS during specific times during June through September. The soils in the area are generally porous and absorb rainfall therefore the creek experiences very little fluctuation in the flow levels from rainfall.

The activity at and around the boat ramp located directly above the dam may influence the water quality of Crescent Creek. The location of docking and fueling facilities directly above the dam may increase the risk of the accidental release of minor impurities into the creek.

The confluence of Big Marsh Creek with Crescent Creek occurs just upstream of the crossing with Highway 58. The naturally occurring flow regimes of Big Marsh Creek moderate the effects of the controlled flows from Crescent Creek and the creek experiences fewer fluctuations. The tannic acid from the organic matter decomposition occurring in Big Marsh colors the water a tea color downstream though the clarity of the water is maintained. This section of stream is dramatically different from the upper section mostly due to the steep canyon that ends near the crossing with the Crescent Cutoff Road.

How the Hydrology contributes to Desired Future Conditions

Recreation and Forest management represent a potential for degraded water quality within Crescent Creek. Developed recreation within the river corridor is fairly limited, currently there is only one campground, Crescent Creek campground. This is a fairly low use campground that presently provides little threat to water quality. There are no official trails within the Wild and Scenic River Corridor. The private land within and adjacent to Crescent Creek represent a potential threat to aquatic vegetation by trespass of off-highway vehicles. If such sites are identified they should be restored and monitored. Forest management such as prescribed fire and timber harvest will continue to promote a resilient landscape and provide protections for watershed health.

Consistent Uses

- Consolidation, removal, relocation or maintenance of trails, roads, and campsites to protect riparian areas would be consistent.
- Vegetation management which meets all other direction and protects stream shade, streambanks, and provides for long-term wood input would be consistent.
- Installation of scientific monitoring equipment with negligible impacts would be consistent.

- Recreation including fishing, hunting and camping with little impacts on riparian vegetation or bank trampling would be consistent.

Inconsistent Uses

- Activities which alter channel morphology such as: removing or cutting instream wood, driving vehicles through the channel or stream banks, bridge or culvert installation which destabilizes stream banks, adding riprap along stream banks or other forms of inappropriate channel manipulation would not be consistent.
- Vegetation management which removes future instream wood, cause's erosion, or permanently alters streamside shade would not be consistent.
- Wildfire suppression that would cause more damage to the creek's water quality and riparian areas than direct and indirect wildfire effects. Activities include construction of safety zones, fire camps, retardant use and hydrologically connected hand/dozer lines would not be consistent.

Standards and Guides

H-1: Wood manipulation to allow boating is not allowed.

H-2: Trails will be designed to avoid sensitive riparian areas and to the extent possible provide access to the creek at designated locations.

H-3: Dispersed camping sites will be regulated to the quantity and location to protect river resources, particularly riparian vegetation and water quality by the Travel Management Project Final Environmental Impact Statement for the Deschutes National Forest, Ochoco National Forest, and Crooked River National Grasslands (2011).

H-4: Habitat improvement projects will be allowed, should be natural appearing and be compatible with other values of the riverine setting.

Fisheries

The construction of the current Crescent Lake dam was completed in 1956 and has blocked fish passage at all life stages between Crescent Creek and Crescent Lake. The current flow management results in a reversal of natural flow conditions where peak flows now occur during the summer (irrigation season) and very low base flows occurring during the fall-spring (storage season). As a result, adfluvial life histories of those native species have been lost. Spawning, incubation, and emergence are likely adversely affected by these conditions.

How Fisheries contributes to Desired Future Conditions

Restoration of a natural flow regime, or run of the river hydrology would likely provide much more favorable habitat and water quality conditions for native species. Restoration of a natural flow regime would likely improve spawning and rearing conditions for native species by making appropriate habitats available during the times of year that these fish have evolved to take advantage of. In addition to providing access to available habitats, flow restoration would also likely result in improved water temperature conditions and thermal complexity. Restoration of a fish passage between Crescent Creek and Crescent Lake would benefit native fishes that historically migrated between these habitats to take advantage of spawning, rearing and foraging habitats.

The restoration of habitat and flow complexity would be of great value to native fish species and the ecology of the river as a whole. The restoration of large logjam complexes, beaver dams, wetlands and highly connected floodplains would provide a much more resilient riparian and aquatic environment.

Consistent Uses

- Stream restoration which protected and improved fish habitat and water quality would be consistent.
- Fisheries monitoring which emphasized genetic composition, distribution, and abundance would be consistent.
- Monitoring and removal of riparian and aquatic invasive species would be consistent.
- Removing bridges and culverts in order to provide unimpeded passage for all life-stages of native fish and other organisms would be consistent.

Inconsistent Uses

- Activities that could pollute the river such as fire retardant, herbicides, or other chemicals would not be consistent.
- Introduction of fish that may affect the genetics of native fish populations, introduce or exacerbate disease, increase competition for resources, or alter predator/prey interactions would not be consistent.

Standards and Guides

See Hydrology Section

Wildlife

The Crescent Creek Wild and Scenic River Corridor supports a variety of wildlife populations. Riparian habitat includes freshwater shrub/forest, fen, and wet meadows. Upland habitat includes lodgepole pine, spruce, ponderosa pine and mixed conifer with large trees scattered throughout. Unique habitats include cliff, lava and other rock formations. Confirmed and unconfirmed sightings include: Oregon spotted frog (T²), northern spotted owl (T), gray wolf (E), wolverine (P), western bumble bee (S), Cascades frog (S), brown creeper (LBFS), great blue heron (MIS) black-backed woodpecker (MIS), northern bald eagle (S), goshawk (MIS), red-tailed hawk (MIS), Cooper's hawk (MIS), and American marten (MIS). This diversity of wildlife is recognized as part of a healthy riverine ecosystem.

Riparian habitats within the WSR corridor are diverse due to the free flowing nature of the river and geological landforms. The upper reaches contain the headwaters to Crescent Creek as well as the largest wetland, wet shrub, and wet meadow complexes. Many of these areas are cycling into wet lodgepole stands. Willow, alder and other hardwoods habitats are scattered throughout the corridor. The canyon section has a narrow riparian area and less diverse riparian habitats.

The upland habitats vary from lodgepole, lodgepole/spruce, to mixed conifer and ponderosa pine. The upper section is primarily lodgepole pine and lodgepole/ spruce mix. Medium to extra-large structure consists primarily of ponderosa pine, with some Douglas-fir, sugar pine and white fir. The canyon section, east of private lands, has less access and provides refugia habitat with late and old structure lodgepole, ponderosa and other mixed conifers. Other unique habitats such as cliffs add to the diversity of the Crescent Creek corridor. All vegetation types occur at all seral stages, providing the diversity of habitats for a variety of common and uncommon wildlife species.

² T=federally listed threatened, E= federally listed endangered, P=proposed for federal listing, S=R6 Regional Forester's designated sensitive, LBFS=land bird focal species, MIS = management indicator species, BCC=birds of conservation concern

Human influences on wildlife habitat include access management, vegetation management, recreation and encroachment by private land owners. They alter or reduce habitat, increase habitat fragmentation, increase disturbances (noise from motorized traffic, recreational use), reduces connectivity, provides an avenue for the introduction of non-native species, facilitates legal and illegal hunting and increases habitat degradation through soil and water contamination. The result is a reduction in core habitat for wildlife species.

Wildlife species vary in their ability to utilize small blocks of habitat. Many forest wildlife species (spotted owl, wolf, elk, etc.) require large blocks of undisturbed land to live and breed successfully, provide security and/or refugia where there is limited access for hunting and trapping. Within the WSR corridor there are four large blocks of core habitat greater than 100 acres, the largest being over 400 acres (within the Old Growth Management Allocation - OGMA). Several other parcels are parts of larger blocks that continue outside the corridor. Approximately 26% of the corridor is in blocks greater than 100 acres.

How Wildlife contributes to the Desired Future Conditions

Elements of the desired future condition for wildlife are that wildlife security and refugia be maintained within the corridor. This can be accomplished by reinforcing maintenance level 1 (ML 1) road closures inside the corridor; careful planning of any additional trail routes that may be constructed to avoid sensitive areas (e.g. Oregon spotted frog breeding habitat, wetlands etc.), and areas that currently have no or minimal human presence, and by managing dispersed campsites and converting unauthorized roads and trails back to natural habitats.

Forest management should create and maintain a diversity of habitat stages and structures that are resilient on the landscape and consistent with Wild and Scenic River designation. This could include low intensity natural disturbances or active management that create openings, promote hardwood tree species, and create/retain large snags and down wood. Having a diversity of vegetation structure within the corridor that is reflective of both the drier and more moist ecoclasses, as well as the significant elevational difference between the bottom and the top of the corridor will be beneficial to wildlife, in addition to improving the scenery ORV.

Consistent Uses

- Vegetation management which complies with current direction and plans would be consistent. Including perpetuate or enhance late and old structure, convert wet lodgepole into earlier seral shrub/meadow/fen stages, or removal of conifers to restore aspen and other unique hardwood habitats would be consistent
- Hunting game with appropriate permits and licenses would be consistent.

Inconsistent Uses

- Actions which fragment forest or riparian habitat would not be consistent.
- Development of trails or roads in sensitive areas (i.e. OGMA, Riparian reserves, Oregon spotted frog habitat, etc.) would not be consistent
- Human disturbance including recreational events, trails and dispersed sites in undeveloped areas which currently function as wildlife refugia would not be consistent.
- Illegal shooting or trapping of wildlife would not be consistent.

Standards and Guidelines

See Hydrology Section

Note: No change to the Old Growth Management Area boundary or Standards and Guidelines.

Cultural History

Approximately 28% of the FS lands within the Crescent Creek Wild and Scenic River (WSR) boundary (excluding 321 private land acres) have been subject to an adequate level of cultural resource inventory surveys as standard procedure have changed in the last 30 years. An additional 11% has been previously surveyed but the surveys are no longer considered adequate. The previous surveys resulted in the discovery of 12 archaeological sites within the WSR boundary. Four of the sites are from the pre-contact era, five are within the historic period, and three are multi component historic/pre-contact sites. Eleven of the 12 sites have been evaluated for eligibility to the National Register of Historic Places (NRHP). Nine of the sites were deemed eligible and two sites were considered not eligible. One site remains unevaluated due to a lack of information.

How the Cultural History Contributes to Desired Future Conditions

A management plan for the heritage resources of the area would identify opportunities for education, research, and recreation access as well as priority sites for protection measures and monitoring. Archaeological research conducted within the Crescent Creek WSR boundary and beyond would be synthesized, published, and continually updated as information becomes known.

Consistent Uses

- Low impact recreation would be consistent.
- Protection/Restoration of the areas landscape character would be consistent.
- Interpretation of the area's history would be consistent.
- Installation of scientific monitoring equipment with negligible impacts would be consistent.
- Prescribed fires conducted in such a way that cultural resources are sufficiently protected would be consistent.

Inconsistent Uses

- Activities which change the area's landscape character would not be consistent.
- Activities resulting in vandalism or damage to cultural resources would not be consistent.

Other Management Direction

Management direction on the Deschutes National Forest comes from the *1990 Deschutes National Forest Land and Resource Management Plan and Record of Decision* (LRMP), as amended by the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (Northwest Forest Plan 1994). These two documents guide planning on the forest through the categorization of land allocation, the description of desired future conditions, and the prescription of standards and guidelines that must be adhered to in each of those land allocations as well as across the forest as a whole. Land allocations from both management plans that occur in the analysis area are explained in below.

Deschutes Land and Resource Management Plan Allocation: (known as Management Areas)

Old Growth (M15)

The goal of this plan is to provide naturally evolved an old growth forest ecosystem for both plant and animal habitat. Old growth forest is managed to provide and abundance large trees, both standing and downed dead trees and a variety of vegetative canopy heights (LRMP 4-149).

Wild and Scenic (M17)

The goal is to protect the Outstandingly remarkable values that qualify segments of the Deschutes, Little Deschutes, Big marsh, Crescent and Squaw Creeks for the inclusion in the National Wild and Scenic Rivers System (LRMP 4-155).

Northwest Forest Plan Allocation:***Aquatic Conservation Strategy/ Riparian Reserve***

The Aquatic Conservation Strategy was implemented to protect and improve the health of the region's aquatic ecosystems. Riparian Reserves are one component of the strategy. The main purpose of the riparian reserves is to protect the health of the aquatic system and maintain and restore riparian structures and functions. Riparian Reserves have been identified for every type of aquatic feature on the forest landscape: streams, lakes, ponds, wetlands, springs, etc. areas where special standards and guidelines direct land use decisions. These Reserves are critical for meeting many of the Aquatic Conservation Strategy Objectives, and as such require special attention in developing management strategies for activities occurring within them.

Private Land

Private land uses are governed by the state and local land use regulations which were reviewed during preparation of this plan. Unless otherwise noted all current land use regulations administered by federal state and local authorities will continue. All private lands within the river corridor are subject to Klamath County comprehensive plan and ordinances. Private landowners are not affected by this management plan but are required under the Wild and Scenic River Act that for any project they have that occurs within the ordinary high water mark of Crescent Creek to follow county, state, and Federal regulations.

Section 7

Section 7 of the Wild and Scenic Rivers Act is a key provision that authorize federal agencies to protect the free-flowing condition and ORVs of designated rivers and congressionally study rivers. The Act also includes a standard that governs water resources projects below, above, or on a stream tributary to a designated river or congressionally authorized study river. Determinations under Section 7 are made by the river-administering agency, for Crescent Creek this is the US Forest Service. Table 3 below describes when a determination under Section 7 is required.

Table 15: Section 7 Determination

When is a Determination Under Section 7 is Required	
Project proposed in <i>bed or banks</i> of a designated river or congressionally authorized study river.	Project proposed in <i>bed or banks of river below, above or on a stream tributary</i> to a designated river or a congressionally authorized study river.
AND	AND
Project is proposed by a federal agency or it requires some type of federal assistance such as a permit, license, grant or loan.	Project is proposed by a federal agency or it requires some type of federal assistance such as a permit, license, grant or loan.
	AND
	Project is likely to result in effects within a designated river or congressionally authorized study river.
Only when both of the above conditions exist is a determination required under Section 7.	Only when all of the above conditions exist is a determination required under Section 7.

Monitoring Plan

This section identifies activities that will be conducted to assess the progress and results of implementing the Crescent Creek Wild and Scenic River Comprehensive River Management Plan. The ecological and social conditions of an area can be expected to occur as a result of natural and human factors. Monitoring

is important to ensure that changes stay within acceptable levels and do not compromise the protection and enhancement of the river values.

For each river value to be monitored, one or more key indicators are selected that will allow managers to keep attuned to changes in the ecosystem or social setting. The indicator description provides an example of how the indicator might be measured, but these sample methods can and should be changed if better means become available. When possible, monitoring indicators that are already being collected for other management purposes were selected to help assure this monitoring plan is attainable.

For each key indicator, a threshold is set. This threshold value indicates the point at which river management objectives are no longer being met. A trigger is also set for each indicator at a level below the threshold value. In most cases the existing low use in Crescent Creek means that current conditions of indicators are all far from reaching either triggers or thresholds. In cases where limited data is currently available, reaching a trigger point may result in further investigation, monitoring, and evaluation. Trigger points were set low to provide an opportunity for early and responsive management actions that prevent a threshold from being reached. In this manner, indicators, triggers and thresholds provide managers with information to determine if the resource values and opportunities they are being used to manage are actually being provided.

Table 16: Monitoring Plan Elements. Including Values, Indicators, Thresholds, Triggers, & Actions

River Value(s)	Indicator Type	Indicator Description	Threshold	Trigger(s)	Possible Management Actions
Scenery	Social	Scenery Photo Points	Long-term decreases in scenic integrity class.	Any decrease in scenic integrity class from baseline conditions.	Develop management options to improve scenic integrity.
Water Quality, ORVs	Resource	Dispersed campsite surveys	Impacts to riparian vegetation with the potential to affect water quality or scenic integrity.	20% increase in number of sites from previous survey.	Verify whether or not the increase in the number of sites has the potential to affect water quality or ORVs.
				Any sites or grouping of sites which reduces the scenic integrity of the area below desired conditions	
				Any site with greater than 10' of continuous reduction in shoreline vegetation.	Evaluate whether or not there is potential to affect water quality or ORVs. If there is potential for effects, develop management options for implementation.
Water Quality	Resource	Non-system trails within WSR corridor	Erosion and other trail impacts that affect water quality, free flow or ORVs.	Any new non-system trails that come within 200' of Crescent Creek	Evaluate whether or not there is potential to affect water quality or ORVs. If there is potential for effects, develop management options for implementation.
Water Quality	Resource	U.S. Forest Service, Region 6 Level II Stream Survey protocol - Large wood frequency, location, and total abundance instream	Large wood pieces per mile meet or exceed watershed analysis standards.		Correct management practices that may be limiting recruitment of large wood. Public outreach and education, regarding the importance of large wood to the fisheries resource. Increased monitoring of instream large wood in the stream systems within the Wild and Scenic River corridor.
Water Quality and Visual Quality	Resource	Invasive Species Presence/Absence	If possible, periodic monitoring focused within the aquatic influence zone of the Wild and Scenic River corridor should be conducted in order to practice the “early detection rapid response (EDRR)” paradigm, which is the most effective approach to invasive species management.		

Public Involvement and Consultation

The Forest Service engaged in a pre-NEPA public input process to learn and discuss what concerns our partners and the local landowners had about the Crescent Creek Wild and Scenic River Management Plan and EA before the project was designed. On September 18, 2015 a letter to partner organizations telling them the Crescent Creek Resource Assessment was completed and to ask their expertise and insight in developing a Wild and Scenic River Management Plan and EA. An October 27, 2016 letter to our public partners detailing that the Crescent Ranger District is committed to completing the Wild and Scenic River EA and Management Plan and asking for their thoughts. On February 7, 2017 an invite to a public meeting was sent to landowners.

On March 29th 2017 a meeting was held with the Forest Service, Klamath County, Department of State Lands, US Army Corp of Engineering, and Oregon Department of Fish and Wildlife to review the Section 7 process and each agencies role/jurisdiction in the process. On April 4th 2017 a pre-NEPA public meeting was held at the Central Cascades Fire and EMS community room where participants worked with staff to draw connections between their concerns, landscape conditions, and management activities that would improve ecological function while delivering public benefits.

A detailed description of the proposed action was mailed on June 23, 2017, to approximately 200 forest users and concerned publics, soliciting comments and concerns related to this project. This project was first published in the Deschutes National Schedule of Proposed Actions (SOPA), a quarterly publication, in Fall of 2015 and has appeared in each quarterly SOPA since then. This is a quarterly report that is distributed to interested individuals, organizations, and agencies Forest-wide. The SOPA is automatically updated and available on the Deschutes and Ochoco National Forest webpage. The project, in detail, is located at:

https://data.ecosystem-management.org/nepaweb/nepa_project_exp.php?project=47575

The Forest Service received comment letters during the initial project scoping for the Environmental Assessment and Comprehensive River Management Plan. Comments were generally supportive of the development of a comprehensive river management plan, and in some cases offered suggestions for specific protection measures the respondents wanted to see considered: river access, recreation capacity, geohazards, mining and minerals. Public input was used to inform and refine the Environmental Assessment and this Comprehensive River Management Plan.

Tribal

During the early stages of this project, government-to-government contact was made with The Klamath Tribes. A September 18, 2015 letter notified The Klamath Tribes that the Crescent Creek Resource Assessment was completed and invited them to share their expertise and insight in developing a Wild and Scenic River Management Plan and EA. An October 27, 2016 letter was sent to The Klamath Tribes and Confederated Tribes of the Warm Springs asking them for their expertise and thoughts on how to best protect this special creek. The proposed action was presented in consultation letters dated June 23, 2017 to the Tribal Chairs and their Cultural Resource Program Managers of The Klamath Tribes, the Confederated Tribes of the Warm Springs, and the Burns Paiute Tribe.

The Proposed Action also included a site-specific Forest Plan Amendment under the Multiple Use category at 36 CFR 219.10 (v) *Protection of designated wild and scenic rivers as well as management of rivers found eligible or determined suitable for the National Wild and Scenic River system to protect the values that provide the basis for their suitability for inclusion in the system that would apply.*

Appendix B- General Information about the Effects of Designation on Private Lands within the Crescent Creek Wild and Scenic River Corridor Boundary

Wild and Scenic River Management Boundaries

The final boundary for Crescent Creek includes approximately 721 acres of private land. Forest Service Standards and Guidelines outlined in the Wild and Scenic River Management Plan apply only to National Forest land; they do not apply to private land within the wild and scenic boundary. The Wild and Scenic Rivers Act of 1968 includes provisions encouraging the protection of river values through state and local government land use planning, but these provisions are not binding on local governments.

Zoning and Land Use

The authority to regulate and control land use and develop activities on non-federal lands rests with local, county, and state governments and not federal government. The federal government does not have the authority to zone or regulate uses of private lands under the Wild and Scenic Rivers Act. However, Oregon State law does require the individual counties to adopt comprehensive plans that are compatible with specially designated natural areas, including federally designated Wild and Scenic Rivers and state designated scenic waterways. Goal 5³ directs counties and cities to resolve conflicting land uses in natural areas such as State and Federal Wild and Scenic Rivers. State land use laws and applicable county zoning regulations are discussed in other sections of this document. The Class I streams and Riparian Areas of Concern management zone (Significant Resource Overlay, Article 57, for Klamath County) addresses specific restrictions and regulations for development and land use along rivers, and the Wild and Scenic zone addresses conflicting use with federally designated wild and scenic rivers and the process for review of projects and development applications.

The Forest Service may provide the county information about potential conflicts with the Wild and Scenic designation or the river management plan and outline concerns about potential river impacts of the proposal. Based on this information and existing regulations, the county then makes the determination as to whether or not to approve the permit application or request.

Land Acquisition and Condemnation

In the case of Crescent Creek, the Wild and Scenic Rivers Act specifically prohibits the use of condemnation of land in fee title because more than 50% of the river corridor is already in public ownership. However the Federal Government can assure compliance with the act through a variety of fair market value compensation options including scenic or access easements, lands trades, or exchanges and willing seller acquisition if funding or exchange lands are available. Either the land owner or Federal Government may initiate the acquisition or exchange process. No lands along Crescent Creek has been identified for potential acquisition, easement or exchange. However, lands within the corridor could be acquired or exchanged based on owner interest and relative resource value. If a landowner is interested in selling, exchanging, or donating their land, they should contact the Forest Service.

³ Oregon's Statewide Planning Goals and Guidelines, Oregon Department of Land Conservation and Development (March 12, 2010).

What does it mean for private landowners with the boundary of Crescent Creek Wild and Scenic River Corridor?

The designation of a river into the Wild and Scenic River System does not change landowner rights unless all or a portion of these use rights are acquired from the landowner. Non-federal landowners with all or part of their lands within the boundaries are:

- Eligible to have lands acquired by the federal government in fee title through sale or exchange on a willing seller basis if land resources warrant public ownership and funding is available.
- Eligible to have interests in their lands acquired by the federal government in the form of scenic, conservation, or public access easements to ensure protection and conservation of outstandingly remarkable river resources.
- Provide incentive for good river stewardship and land management practices, such as:
 - Offers of technical assistance from USFS resource specialists such as hydrologists, fisheries and wildlife biologists, and foresters;
 - Opportunities to partner with federal and state agencies to receive financial assistance and grants for resource enhancement projects;
 - Landowners within the boundaries also have available riparian tax incentives, habitat enhancement project opportunities, and access to other state and federal voluntary resource enhancement restoration programs.

Owning land within the boundary does not mean:

- That the public has the right to trespass on private lands.
- The federal land management agency personnel have the right to enter private lands without permission.
- That there is any change in the State's claim to the bed and banks of navigable waterways.
- That there is any change to existing county zoning of state land use laws.
- That there is a change to valid existing water rights.
- That there is any change to the application of other state and federal water quality laws, wetland protection laws, waterway removal or fill requirements, or other existing river-related laws, ordinances, regulations or acts.

Owning land within the boundary does mean:

- That landowners cannot develop or construct hydropower project dams or reservoirs requiring Federal Energy Regulatory Commission licensing.
- The landowner cannot construct or develop water resource projects such as diversions, dikes, dams, or other instream structures which would have a direct and adverse effect on important river resources. Each proposed water resource project will be evaluated on its potential effects or impacts on attributes for which the river was designated. A Section 7 analysis may be required.
- That landowners are allowed to maintain existing roads, bridges, instream structures (dams, diversion structures etc.) and erosion control or flood structures that are in accordance with applicable County, State, and Federal laws and regulations.

Forest Practices and Timber Harvest

Forest practices and timber harvest on private lands continue to be regulated under conditions and regulations set forth in Oregon Forest Practices Act. Forest management activities are allowed within the river corridor on Scenic and Recreational classified rivers as long as those activities do not have long-term, direct and adverse effects on important river values such as fisheries, or water quality. The Federal Government cannot regulate timber harvest on non-federal lands except through acquisition. Also, it is important to note that boundaries are not the same as vegetative buffers and should not be construed as such.